



MAGAZINE

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The *I.C.I. Magazine* is published for the interest of all who work in I.C.I., and its contents are contributed largely by people in I.C.I. It is edited by Richard Keane and printed at The Kynoch Press, Birmingham, and is published every month by Imperial Chemical Industries Limited, 26 Dover Street, London, W.1. Telephone: REGent 5067-8. The editor is glad to consider articles for publication, and payment will be made for those accepted.

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Front Cover: Indians fleeing with their children from the volcanic eruptions at Paricutin, Mexico, in 1943.

OUR CONTRIBUTORS

KEVIN FITZGERALD is on the staff of Central Agricultural Control, having been until recently the manager of our office in Dublin. He has been inspired by what he describes as "the dangerous pursuit of reading the Magazine" to write an amusing article on mountain-climbing.

C. S. JAGGER, son of the famous sculptor, is a member of the African Department. He joined Plastics Division Supply Department straight from school in 1938. His hobbies are manifold—antiquarian horology, numismatics, crime stories and jazz music.

K. W. PALMER has been associated with the nylon project ever since it was in the design stage in 1940. He took charge of the first nylon plant at Huddersfield and after piloting the post-war nylon expansion scheme became works manager at Nylon Works, Billingham, in 1948. His article is based on a talk given by him to the Billingham Division Council.

FREDERICK H. POUGH, Curator of Physical Geology and Mineralogy at the American Museum of Natural History in New York, contributes a shortened version of an article published in *Endeavour* in January 1951 and has lent us some remarkable photographs. Dr. Pough has made numerous trips to the new volcano in Mexico and has compiled a motion picture record of its history.

NYLON IN THE MAKING

(A talk given to Billingham Division Council)

By K. W. Palmer (*Dyestuffs Division*)

Drawings by Arthur Horowitz

THE story of nylon started in America twenty-one years ago. Its very beginnings must be traced to the day when the executive of the du Pont company decided to take a step right into the exploration of the unknown, and finance, as a complete gamble, organic chemical research of a fundamental nature. They chose a very brilliant chemist to lead the team, by name Dr. Wallace D. Carothers, allowing him to choose the subjects of his research, and he set himself to the problem of building up giant molecules from simple ones.

Giant molecules of almost unbelievable complexity exist in nature, built up in living animal or vegetable tissue by extremely complicated chemistry. Carothers set out to imitate, in various ways, something of this type of thing which goes on in natural processes, and to build all sorts of huge molecules from simple beginnings. His researches, conducted at the time remember without any definite commercial objective or any promise of profitable outcome, were brilliantly successful. He built what has often been referred to as a treasure chest of knowledge, and two of the outstanding things which came out of it were the famous synthetic rubber neoprene and the even more famous nylon.

All naturally occurring fibres, such as cotton, wool and silk, have one thing in common. Their molecules are very long, slender chains which lie roughly parallel to each other, and



ONE OF SEVERAL CONTROL ROOMS at the Nylon Plant, where automatic instruments regulate the process, controlling temperatures, rate of flow and pressures

when Carothers made the product now called nylon he had set out to make long-chain molecules. It must have been an exciting moment that day in the laboratory when a spatula dipped into this new material (which when molten looks like treacle) drew out to pull a thin, sticky filament which solidified on cooling to a thread capable of being cold drawn to something surprisingly strong and elastic.

Nylon is what is called a "super-polyamide." You can imagine it made from two components. Component A we call adipic acid; imagine this as having a pencil-shaped molecule with a hook at each end. Component B we call hexamethylenediamine; imagine this as another pencil-shaped molecule of about the same length, but with an eye at each end. Now bring them together under the right conditions of reaction and the hooks slip into the eyes at regular intervals all along the line. The long term "super-polyamide" is now explained. Super—big; poly—many, signifying the process of making one big molecule out of many small ones; and amide—the chemical linking grouping which I have illustrated as a hook and eye combination.

The value of this discovery of Carothers was instantly recognised by the du Pont company, and an exceedingly large number of technical people, chemists, physicists, and engineers—as a matter of fact over two hundred of them—set to work to convert the invention to a commercial proposition. The

amount of work required and the development of the entirely new processes, including the brand-new melt-spinning process never previously attempted, was a modern miracle. The first filaments were seen in the laboratory in May 1934. By autumn 1935, of the various chemical candidates, the present nylon was chosen for development. In eighteen months the first pilot plant had been erected, and the first commercial plant to start production followed by the end of 1939. This was a truly prodigious achievement, particularly when one knows the problems which had to be met and solved.

Perhaps I should go a little deeper into the melt-spinning process. Nearly all natural fibres—wool, cotton, linen and so on—are what are called staple fibres. They are derived from great numbers of short lengths of individual fibres which are teased out in some way to make them all lie parallel to each other, then twisted together to form a yarn of continuing length with the fibres all interlocked and held together by friction.

Silk, on the other hand, is a long, continuous filament which is unwound from the cocoon, and its gummy coating has to be washed off before it can make usable yarn. Now when rayon is made, for example viscose, the cellulose has been converted into a treacly dope which can be squirted through fine orifices into a coagulating bath, where it solidifies into filaments. That process is called wet spinning. When acetate rayon is made,

the dope of cellulose acetate this time is a solution in acetone, which is squirted through orifices into a heated chimney where the low-boiling acetone is evaporated off to leave the solidified filament. This is called dry spinning.

The novelty about melt spinning, invented for nylon, is that the material has to be continuously melted at a high temperature at precisely the right rate (for nylon degrades if it is held molten) and squirted through orifices, to be chilled quickly to solidify the filaments. I can assure you that the problems posed in the design for this operation were very formidable ones.

There are two things in the whole project which to me stand out for great admiration. First was the decision to spend money on research without any concrete expectation of return. Second was the amazing technical teamwork required to develop the invention to a commercial proposition. Nylon is the sort of thing that cannot be produced by the "backroom boy" of popular concept. It can only come from a very large and powerful team organisation with not only the resources but also the courage and enthusiasm and spirit of adventure. It is the modern industrial version of Elizabethan venture, which in my view could not be tackled on the one hand by a small unit, or on the other hand by a tired and hamstrung bureaucracy.

Expanding output

I.C.I. became interested in nylon just before the war, and after negotiations arrangements were made for I.C.I. to manufacture the chemical product we call nylon polymer; a company formed jointly between I.C.I. and Courtaulds, called British Nylon Spinners, was to spin it. The first plant to make the intermediates and polymer was erected at Huddersfield, and the first spinning plants at Coventry and Stowmarket. The capacity was 400 tons. During the war the whole of the output was bought up for military purposes, primarily for man-carrying parachutes, parachute cords and aircraft tow-ropes. With the loss of the main silk-producing areas in the Axis countries, nylon was a godsend to the allied air forces.

Before the war ended, plans were laid to expand output on a commercial scale. The original Huddersfield output of 400 tons a year was gradually boosted as time went on, until about 1000 tons a year could be (and still is) made. Billingham was chosen as the site for the new nylon works of 5000 tons a year capacity, while Pontypool in South Wales was the spot selected for the new spinning factory. The choice of Billingham was made because of the availability of the main raw materials, including hydrogen, ammonia and nitric acid, which could be piped to the works; because of the availability of steam and power and services; and also because it added to the characteristic employment in this area of chemical operatives and engineering tradesmen.

So Nylon Works was built, being designed and constructed by Billingham Division on information supplied by Dyestuffs Division. I would like here to pay great tribute to Billingham Division for the very fine effort they put out in this happy example of a fraternal co-operation between two component Divisions of our Company.

The works consists of seven main stages of process and a number of auxiliary stages. Its character is principally that of continuous operation, where stage 1 continually feeds stage 2, which chemically converts the product and continuously hands it on to stage 3, and so on.

We start with nitration-grade benzene and convert it in seven synthesis stages to nylon polymer. It is a modern works,

with very heavy instrumentation and automatic control, and with a high productivity per process operative. It employs 600 workpeople and 125 staff, and as a matter of interest the number of process operatives is considerably less than the number of engineering employees maintaining and servicing the plants.

One special feature of the Nylon Works processes is the imperative need for extremely high chemical purity of the intermediates. Minute traces of impurities can have a profound effect on the behaviour of the product in the final stages of spinning and processing. This, in fact, is one of our main headaches. It is like sitting on a quiescent lobster which might nip at any moment.

It is regrettably true that so far, after years of work in America and over here, we still cannot tell for certain by analysis of the polymer whether the material will spin to an excellent product. We can often tell when something will be bad, but it is still possible to have two lots of polymer which to all our present tests appear identical and yet find differences in spinning characteristics. It has been said that, actually, Carothers' greatest contribution to this whole technical development was his recognition of the need for very high purity of the intermediates used.

One answer to this general difficulty is, of course, as slavish an adherence as possible to absolutely standard operational practice, particularly in the final polymerisation. I mentioned, for example, that nylon degrades in the molten state. If we have, for reason of a defective valve or a jammed cutter, to keep the product molten for half an hour longer than we should, that lot has to be segregated. It is possible to tell, by dyeing differences on the final yarn, a difference of 7% in the polymerisation cycle.

The final product

The final product which leaves Billingham is in the form of tough, irregular white chips like shattered bone or ivory, and we send out most days from three to six stainless steel containers, each holding about four tons of polymer. On the average, every day we send out enough polymer, if it were all converted into hosiery yarn, to make between 600,000 and 700,000 pairs of stockings.

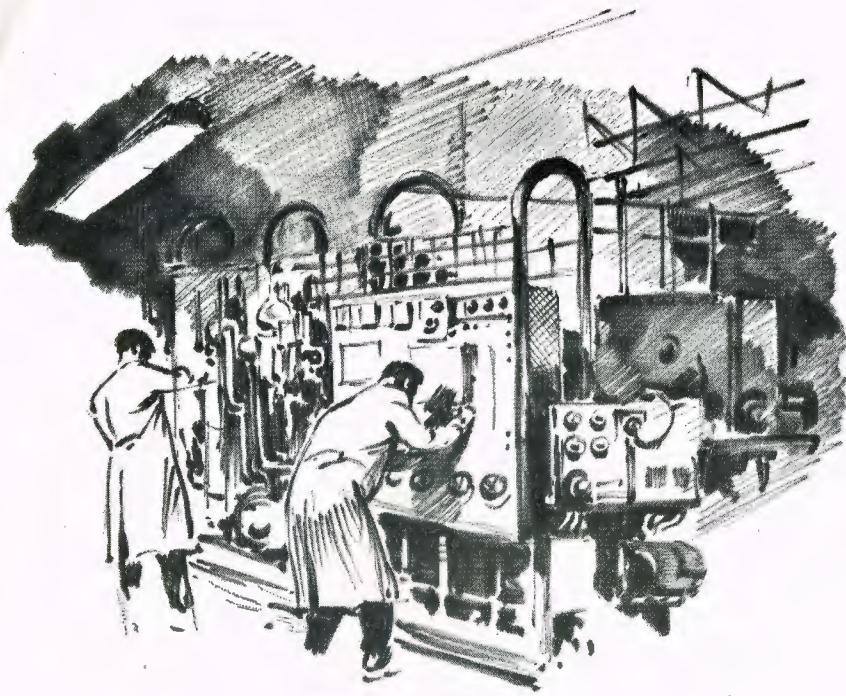
Down at Pontypool the product is melted and forced in the molten state through spinnerets to form filaments which are chilled by a current of cold air, a number being twisted together and wound up on a bobbin as undrawn yarn. This is later cold drawn to about four times its original length, and the remaining operations include twisting and putting on various finishes. Spinning speeds are high and the number of yarn defects tolerated are very low indeed.

Filament diameters are very small. For example, 10,000 metres of typical filament weigh only three grams: call it over two miles length to the weight of a pinch of salt. From Pontypool the yarn, in various packages, in varying weights per unit length, and with a varying degree of twist, goes out to the hosiery knitters, the warp knitters, the weavers, and so on, up and down the country.

Nylon is important in the country's export trade, accounting either as yarn or finished goods for over £10 million export value in 1950, and earning valuable hard currency. At the present time about 60% of the output goes into hosiery—mostly, alas, for export—but over 200 applications have been developed and the list is still growing fast, from lingerie to tyre cord, umbrellas to fish-nets, filter cloth to ropes, nylon's



STAINLESS STEEL HOPPERS from which purified adipic acid is delivered pneumatically to the succeeding stages in the process or drummed off for special purposes. Adipic acid is one of five intermediates in the making of nylon and the only one to be handled in solid form.



LABORATORY CONTROL AND ANALYSIS play an unusually important part in the making of nylon polymer. This drawing shows a typical scene in one of the laboratories where the work of checking quality continues day and night.

great strength and elasticity finding diverse uses. Weight for weight, its tensile strength is greater than the strongest steel yet developed.

I sometimes think, by the way, that it is a pity that women insist on having such very sheer stockings as those made of 15 denier nylon. These are meant for special occasions and naturally do not wear as well as the 30 denier stockings, since the yarn is twice as fine; all women's stockings will ladder once the yarn is broken unless they are knitted with a lockstitch construction, and the finer the yarn, of course, the more easily it will break.

I have seen men's socks made of nylon staple fibre (which looks and feels like wool) which can be worn for ages without wearing holes or shrinking. In the case of socks which are a 50-50 mixture of wool and nylon the wool has been known to wear completely away, leaving a thinner place which is the nylon left behind.

And now, what of the future? Sanction has been given and work is now proceeding (with Billingham Division accepting the same burden as before) on a project to increase the capacity of Nylon Works by three times. We hope to complete it in 1954. This project will saturate the local site here, with our personnel grown to about 1100. Beyond that the prospects seem just as bright, and I personally expect to see much further expansion—perhaps another nylon works on another site quite soon after.

Nylon is the beginning. There will be lots of other synthetic fibres, like the all-British 'Terylene' (which du Pont are taking from us as we took nylon from them; they are going to make it under the name 'Dacron.') There are others, like the new du Pont 'Orlon.' A good many companies throughout the world are very greatly interested in synthetic fibres from high polymers, and a tremendous amount of exciting research work is going on all the time.

Man has got along for centuries with a very few natural

fibres, and out of his ingenuity contorted them and adapted them to thousands of different applications, for which very frequently they have been far from ideal. Then, at the turn of the present century, he started regenerating fibres—turning the cellulose of cotton or wood into rayon. Now, in nylon, comes the first truly synthetic fibre tailored in the chemical laboratory. We are beginning to find out how to tailor new

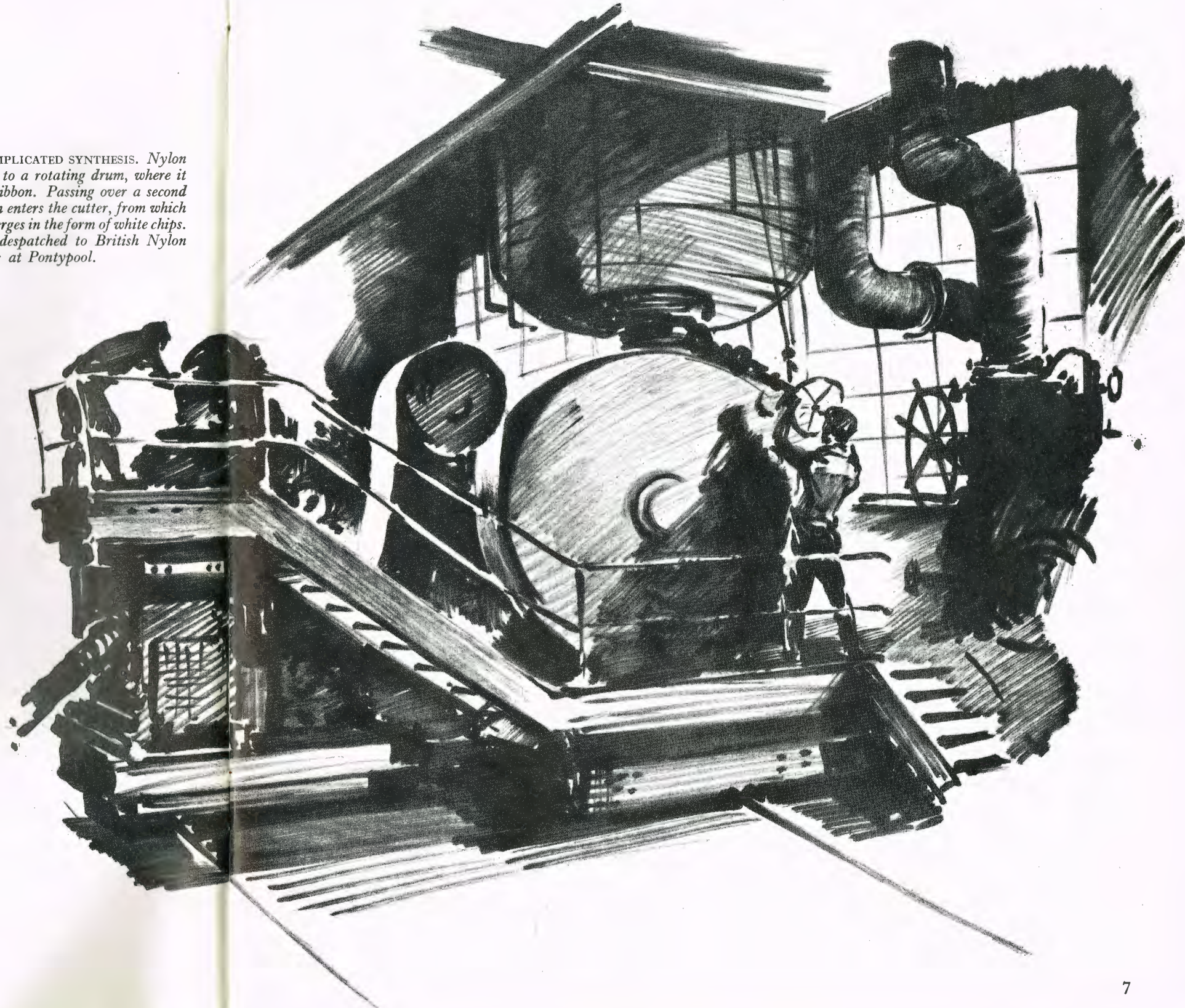
fibres to suit special uses. When you consider that in fifty years the output of cellulosic rayons has leaped up to match the output of wool, you can, I think, see what potentialities stretch out for the future of synthetic fibres springing from the chemical industry.

The world consumption of fibres is currently, I think, something like twelve million tons a year, and is increasing at a rate of growth something of the order of 500,000 tons every year. Against this, the addition of a mere five-, ten- or twenty-

thousand ton plant is very small beer indeed, and puts into perspective the question often asked, "How will the synthetic fibres compete with wool or cotton?" It is more a question at present of adding a tiny touch of colour to the palette of the artist who converts and applies fibres.

Yet what is small output in the world of fibres becomes relatively big in capital outlay and complexity of effort when it is a question of complicated synthesis in the chemical industry.

THE CLIMAX OF A COMPLICATED SYNTHESIS. Nylon polymer is extruded on to a rotating drum, where it solidifies and forms a ribbon. Passing over a second smaller drum the ribbon enters the cutter, from which the finished product emerges in the form of white chips. These chips are then despatched to British Nylon Spinners at Pontypool.





THE THIRTY-SECOND CENTRAL WORKS COUNCIL

LANCASHIRE's seaside playground can be a dull and cheerless place when the chill winds, heavy seas and torrential rains of autumn drive the last visitors indoors to seek what comfort remains after the illuminations have brought an end to Blackpool's holiday season. So it was on 16th November, when the thirty-second meeting of the I.C.I. Central Council returned to the Spanish Hall in the Winter Gardens and renewed its acquaintance with the cardboard castles and the orange glow cast by the painted skylights. Below the ramparts of the castles the scenery was enhanced by a display of I.C.I. safety equipment and accident statistics, a gentle reminder that the pleasure of a visit to Blackpool at this time of the year must be combined with business.

At 10 a.m. the Council had assembled; an impressive collection of some four hundred representatives of all branches of the Company, and on the platform an even more impressive gathering of members of the Board and senior officials, with the Chairman, Mr. John Rogers,



The I.C.I. Accident Prevention Trophy, awarded at the meeting for the first time

presiding once more over the meeting. After referring to the death of Mr. J. Butler of Wilton Works, Mr. A. W. Inglis extended a welcome to representatives of a new Works Council, Olefine of Wilton, and to two overseas visitors, Messrs. J. R. A. Glenn and L. W. Weichardt of I.C.I.A.N.Z.

From the chair, Mr. John Rogers, in the friendly conversational tone which is now associated with him, began his address with a reference to the four recent appointments to the I.C.I. Board. With the exception of Mr. R. C. Todhunter, who was visiting Cyprus on Company business, the other three newly appointed members, Messrs. P. C. Allen, E. A. Bingen and A. T. S. Zealley, were all present, and, at the request of the Chairman, they stood up to receive the applause of the audience.

After touching briefly on the political situation in the country as a result of the recent election, the Chairman turned his attention to the United States of America and Canada and reminded the meeting of the interest now held by



The Chairman presents the Accident Prevention Trophy to Mr. P. K. Standing, chairman of Dyestuffs Division. Sir Ewart Smith is on the right, Sir Arthur Smout on the extreme right, and Mr. H. O. Smith on the left.

the Company in the firm of Arnold Hoffman & Co. He ended his address by stressing the importance of Canada industrially in the future, with its immense oil resources, and the consequent importance to I.C.I. of Canadian Industries Ltd.

Canteen Prices

Confirmation of the minutes of the previous meeting heralded the major business of the day, and Mr. T. McCall (Nobel) took up the question of canteen prices, expressing the desire of the workers for uniformity of prices and prior notice of any increases which might be proposed. Mr. J. Hastings (Metals) made his first visit to the microphone to suggest that a committee of one representative of each Division should be formed to watch over this question. He was supported by Mr. J. Noden (Salt) but was opposed by Mr. J. T. Tierney (Plastics), who, although in the minority, must be congratulated on a speech which sparkled with lively wit and cynicism.

The question was solved by Dr. C. J. T. Cronshaw, who stated that the Board had agreed to circulate to Division Councils any proposed increases in prices in the future. He issued a warning, however, that in view of the increase in wages and in prices of food, further rises in canteen prices would again have to be considered. Mr. J. Hastings, returning to the rostrum, said that in view of this good evidence of joint consultation he would withdraw the motion. On this pleasing note the Chairman adjourned the meeting for twenty minutes while coffee was served.

Returning refreshed and enlivened by the warmth of the beverage, the members took their seats and listened to Mr.

W. H. Hubball (Alkali), supported by Mr. J. Parkes (Alkali), proposing a resolution that the present share investment scheme should be brought more into line with the original scheme. This suggestion brought the Finance Director (Mr. S. P. Chambers) to his feet, and while congratulating both proposer and seconder on the way they had put the resolution forward, he explained why he considered the original scheme undesirable, and suggested that the resolution should be rejected and the matter considered further under Item 10 of the agenda. In the face of such an authoritative statement the meeting unhesitatingly agreed to this suggestion.

Other members of the Board were much in evidence on the next two items arising out of the previous minutes. First, Dr. C. J. T. Cronshaw explained why the Board was not prepared to consider extending existing arrangements for giving financial assistance to employees still unfit for work after 26 weeks' absence. He was followed by Mr. W. J. Worboys, who announced the introduction of the Editor's Post Bag as a supplement to the *Magazine*.

Having completed the questions outstanding from the last meeting, the next item on the agenda referred to standing orders, and Mr. W. C. Lyle (Billingham) suggested that in the interests of joint consultation, representatives on Central Council should be given the reasons prompting the withdrawal of any items from its agenda. After hearing both management and workers views on this, the motion was put to the meeting and carried unanimously after the wording had been slightly altered at the request of Mr. A. W. Inglis. At this stage the Chairman decided that the moment had come



Mr. T. McCall (Nobel), chairman of the workers' representatives

to adjourn the meeting for a well-earned lunch, and congratulations must again be offered to the Central Labour Department for the excellent arrangements made for feeding such a large gathering. The multitude overflowed from the Baronial Hall, but this did not affect the excellence of the service or of the food provided.

Opening the afternoon session, the Chairman introduced Mr. E. A. Bingen, who had arrived back from the U.S.A. only the day before the meeting after one of his many visits in connection with the Company's recent litigation there. The law can be a very dry and often a depressing subject, but Mr. Bingen in a fifty-minute address on this litigation had no difficulty in holding the interest of the meeting. A résumé of his talk will appear in the February issue of the *Magazine*.

Pension Fund

After this most interesting and enlightening interlude, the meeting was in the right mood to continue with the remaining items on the agenda. Mr. J. A. L. Young took the floor to present the report of the Pension Fund, and applause greeted his statement that while the final actuarial report was not to hand the calculation which had been made in six months instead of the usual two years indicated that the surplus was in the region of £2,345,000. Mr. H. O. Smith brought further applause from the meeting when he said that the Company had again waived its right to alter its contribution and the surplus would therefore be available for the benefit of the members of the Fund. During a discussion on the report which followed, the meeting was asked to consider the motion

put forward by Messrs. T. Fisher and J. Hastings (Metals) that employees, during the time they are on whole-time National Service, should have their contribution to the Fund maintained by the Company. When put to the vote the motion was carried unanimously.

Safety and Civil Defence

Sir Ewart Smith, presenting the report of the Safety Campaign, introduced a sombre note into the meeting by referring to the subject of Civil Defence, and reminded us that the training which was going on in the country and within the Company was an essential form of insurance against possible war. He announced the appointment of General Sir William Morgan, whose duty it would be to supervise and advise on aspects of Civil Defence in the same way that Sir Walter Kirke had done so efficiently during the last war. Turning to the safety report itself, Sir Ewart said that it was a matter for congratulation that the present frequency rate of 1.3 was the lowest yet recorded in the history of I.C.I. He reminded members, however, that the target had been set at less than 1.0 and that when 1.0 had been reached an even stiffer bogey would be fixed.

A magnificent trophy was at this stage placed on the table in front of the Chairman, and Sir Ewart announced that this, the newly acquired Accident Prevention Trophy, would be presented to the Dyestuffs Division for safe keeping until the end of the first half-year, when the first winners would be announced. Dyestuffs had been chosen on account of their remarkable progress in recent years. The trophy was then



Mrs. S. Cross (Metals)

presented by the Chairman to Mr. P. K. Standring, who in his reply indicated that he had no intention of letting it go out of his possession if he could possibly help it.

Long Service Awards formed the subject of the next item, and the chairman of the workers' representatives, Mr. T. McCall (Nobel), must be congratulated for his strategy in presenting the resolution. He introduced to the microphone the proposer, Miss E. Russell (Nobel), who, in a most attractive Scottish accent and with a witty turn of speech, asked the Board's consideration to the provision of some other gift for 40 years' service. She made a good case for an alternative to a clock, which has hitherto been presented, and Mrs. S. Cross (Metals), who seconded the proposal, gave ample support to the essentially female argument. The proposal was put to the meeting and was carried unanimously, proving to the hilt the good generalship of Mr. McCall in selecting his speakers.

Appealing for the replacement of the present numerical quota in connection with the Staff Grade scheme by a standard of attainment, Mr. J. R. Allen (Alkali) was the only member of the day to be warned by the red light over the rostrum that he had exceeded his allotted five minutes. After hearing both management and workers' representatives argue this case, an amendment was suggested that the matter should be referred back for consideration to Division and Works Councils, and this was carried by a majority.

Now, at last, we had reached Item 10, and everyone expected an exciting speech from Mr. S. P. Chambers. The item referred to a profit-sharing scheme, and it was suggested to the meeting that such a scheme would provide an added incentive to existing workers and a stimulus to the recruiting of new employees.

Mr. J. Hastings (Metals), speaking for the resolution with considerable good will and hilarity, felt that in his earlier address Mr. Chambers had indicated possible support for such a scheme. The Finance Director soon dispelled this illusion, and with his usual clarity of expression outlined the many disadvantages and the few advantages of a profit-sharing scheme. He emphasised the need for very careful consideration of any such scheme and strongly advised all concerned to give it thought and to discuss it at Division and Works Council level before committing themselves to such a resolution at this meeting. Put to the vote, it was unanimously agreed to allow the resolution to lie on the table, and a promise was given that the whole question would be considered in great detail by the Board.

So we reached the end of a long but interesting meeting

which had clearly demonstrated the principles of joint consultation and democratic freedom of speech at its best. The experienced speakers and the not-so-experienced spoke in a way which earned the congratulations and applause of the meeting. Some, it is true, exhibited a little fear of the microphone, but they need have no worry about this—all good broadcasters suffer from "mike-shyness." Neither this nor the flashing of photographers' bulbs could put the speakers off, and it was obvious that their subjects had been well chosen and well studied beforehand.

Before bringing the meeting to a close the Chairman rose to announce the impending retirements of Mr. H. O. Smith and

Mr. John Hay. He paid a tribute to Mr. H. O. Smith's qualities as a personnel director and to the long record of service given to the Company by both him and his family. Mr. Hay was held in high esteem by all, not only within the Company but also within the trade unions, with whom he was constantly in consultation. Mr. Rogers regretted that Mr. Hay was absent from the meeting as he was unwell.

Mr. McCall (Nobel) associated himself with the Chairman's remarks and extended the best wishes of all present to both gentlemen. Continuing in a few well-chosen words, he thanked the Chairman for his conduct of the meeting and for the hospitality and the excellent concert which had been provided on the previous evening. In conclusion, he reminded the meeting of the "back-room" work of organisation carried out by Miss E. Webster, who, hearing the applause which greeted this remark, could be assured that her efforts were appreciated by all representatives.

At 5.15 p.m. the meeting closed and four hundred representatives reclaimed coats and baggage and forsook the warm and friendly atmosphere of the Spanish Hall to return to their various factories, taking back with them the results of the deliberations of this thirty-second Central Council meeting. Should it be called a council or a parliament? There were no fiery arguments or battles on the floor of the house. To a visitor the impression was rather one of friendliness, a harmonious discussion with only minor differences of opinion, such as one might find in any large family.

Here were no strangers glowering at each other over the conference table; instead the family had come together in an effort to solve their problems in a cheerful frame of mind, determined throughout that their decisions should be acceptable and beneficial to all. Let us then remember this as the thirty-second I.C.I. family reunion and look forward to meeting all our relatives again in six months' time.

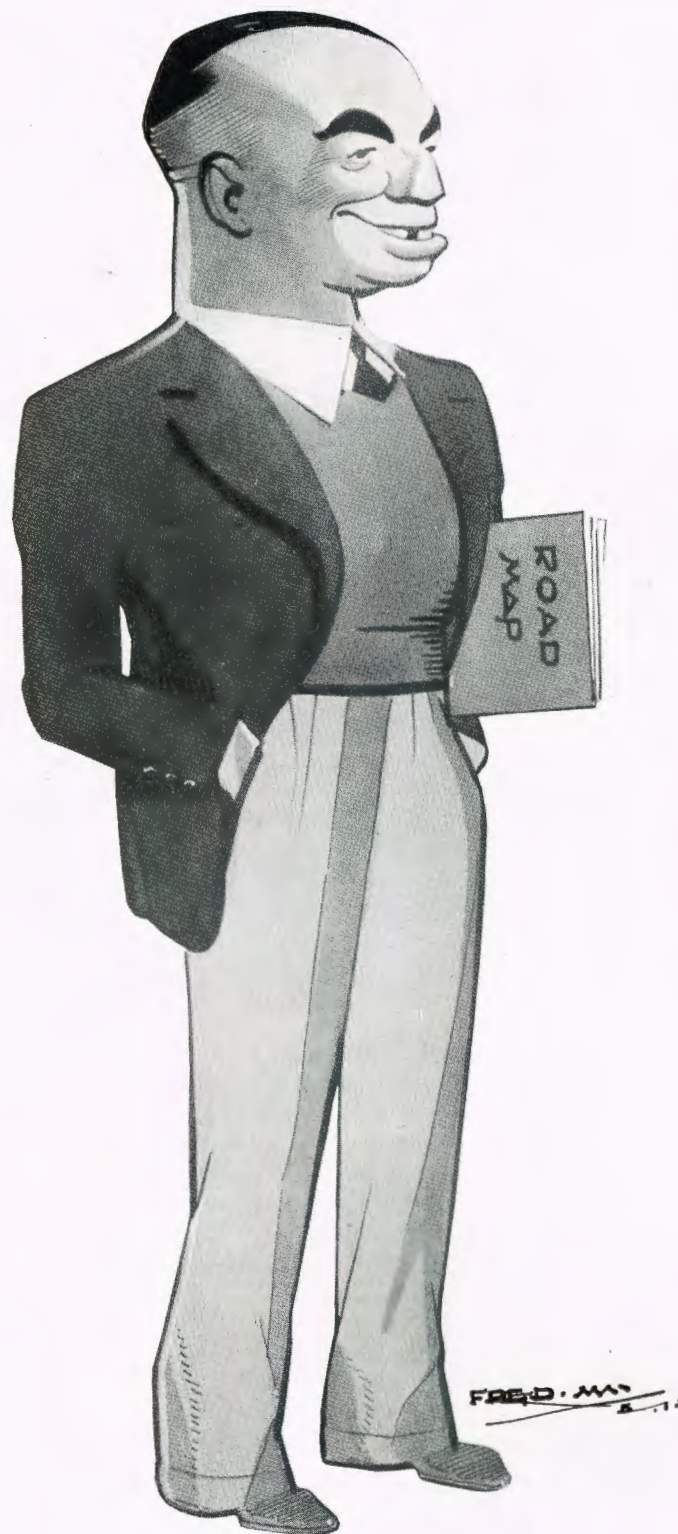
A. L. P.



Mr. J. R. Allen (Alkali)

JIM MAIDENS

(Wilton Works)



HERBERT MAIDENS, chauffeur to Dr. Armit, chairman of Wilton Council, is known to everyone as Jim—a name he adopted when he first joined the Company at Billingham twenty-five years ago and found himself in a cable-rigging gang that already contained two Berts.

Jim was born at Middlesbrough, and has the stocky figure, blunt speech and ready wit you would expect in a Tees-side man. His father was a steelworker. Jim was, too, for a year, but at the age of 15 he ran away and tried to join the Navy. At the recruiting office they told him he was too short, so he cut down his smoking for six months and tried again. This time he was accepted, and in 1917 he began a period of service as an engine fitter with the R.N.A.S. and the R.A.F. which lasted until 1922 and which eventually took him to Egypt and the Middle East. Soon after returning to civilian life he found himself out of a job. Tees-side was in the throes of the slump, and for five years life was so hard that he prefers not to recall it. He joined Synthetic Ammonia and Nitrates Ltd. as a general labourer in 1926 and graduated by way of the cable gang to the transport department, where he became a driver.

When war broke out again Jim Maidens was in camp with 608 Auxiliary Air Force squadron, which he had joined at Thornaby in 1930. He was stationed in the Shetlands with this squadron for much of the war, and then went to Fighter Command and a Coastal Command maintenance unit. He was demobilised in 1945 with the Air Efficiency Award and the rank of Flight-Sergeant.

Soon after returning to Billingham he was sent to Wilton, where he arrived "before the pegs were in the ground." He has since driven Dr. Armit more than 63,000 miles and covered countless miles on other jobs.

Jim Maidens lives in a Company house at Billingham with his wife and a son, who works in the power station there. Until 1936, when he tore the cartilages in both knees, he used to swim, box and play soccer. Now he confines himself to darts and dominoes at the local, where he is also known as a keen follower of the Synthonia XI and a stern critic of the Middlesbrough team. In his time he has raced pigeons and bred all kinds of dogs, from boxers to whippets; he even bred poodles, but they proved a little too fancy for local taste.

In joint consultation Jim's bluntness and good sense are much valued. In October 1948 he became a member of the first Works Council to be elected at Wilton. He represented Wilton Works at the Central Council held in November 1948, and he was again the representative from Wilton Site Council last November.



The Birth of a Volcano

By F. H. Pough

Preoccupied with the man-made violence of global war, the world hardly noticed the remarkable phenomenon of the new volcano which, in 1943, burst into activity in Mexico. The story of this eruption is here illustrated with some magnificent photographs lent from America.

FOR about a fortnight in mid-February 1943 villagers of Parícutin, an Indian village in the mountain state of Michoacan, Mexico, had been alarmed by persistent earth rumblings and mild earthquake shocks. On 20th February Dionisio Polido, one of the village farmers, was ploughing his cornfield. He noticed that in one place the earth was unusually warm beneath his bare feet, and soon afterwards he saw a wisp of smoke ascending from a crack in the ground in the middle of this spot. As he leaned against his plough, watching this phenomenon, a tongue of flame seemed to thrust upwards and rocks and dust tumbled out of the air. A terrified Dionisio Polido fled. Shortly afterwards he and his fearful fellow villagers saw great clouds of black smoke whirling into the sky, while more violent earthquakes rocked the ground and tumbled their church down. When darkness came that night their countryside was lit by the heap of glowing rocks and cinders piled up in what had once been a productive maize-field. That was how the volcano Parícutin, which takes its name from the village, made its first appearance, but its birth was almost unheralded in the world press, at that time pre-

occupied with reporting the man-made violence of a global war.

The cone of the new volcano climbed rapidly as the crater continued throwing out rocks, some of which ascended to a height of about 2000 ft. Every few seconds there were loud underground explosions. On the fourth day a sluggish stream of lava, 15-20 ft. wide, crept out of the crater. In time thousands of acres of farming land were ruined, and a thousand people were evacuated from two nearby villages by the Mexican Government. Two months after the first eruption Parícutin was over 800 ft. high, while torrents of lava continued to escape hither and yon over the fields and forests.

Ashes fell from the towering dust column on Mexico City, 180 miles to the north-east.

Today the summit of Parícutin's cone is about 1600 ft. higher than the level of Dionisio Polido's maizefield, although its total height seems less because of the floods of lava which lap its flanks. It rose rapidly in its smaller, early stages, but by now it has spread so broadly over the adjoining countryside and also steadily diminished in explosive activity, that it has probably attained its maximum height.



NIGHT-TIME VOLCANIC ACTIVITY forms a magnificent spectacle as it bursts from several vents at once. The cone seen in this picture has been formed from the mass of material ejected from the bowels of the earth.

During the early months of its activity the frequent and violent explosions from the new volcano made a magnificent spectacle. For the first few weeks the eruptions from the crater were largely bombs (lumps of molten rock) and lava shreds, but then the character of the activity changed and for the next few years the volcano poured out vast quantities of solid material, ranging from small stones to a light grey powder. All the surrounding countryside was smothered by this ash, and within half a mile of the cone deposits were 20 ft. deep. Since the prevailing winds of the dry season blow from



CLOUDS OF VOLCANIC DUST whirled upwards by the wind hang in dense clouds over the dust-laden countryside

the north-east, the wind-lain ash was not distributed uniformly round the cone but was piled higher and spread further south and west of the vent. A reversal of the winds during the rainy season laid moderate ash deposits elsewhere round the cone, the beds thinning out to a depth of a few inches ten miles or more from the volcano.

The forests immediately surrounding the volcano were soon affected by this ash. Pines turned yellow, and those nearest the cone died within a year. Nearby oaks proved more resistant and kept sprouting new growths repeatedly, but in time they too succumbed. Outstretched pine branches near the cone were stripped of bark by the falling dust, and their upper surfaces look worn as if they had been sandpapered.

Now, during the dry season, from November to June, the sun shines daily on bare fields covered with a thick layer of light, loose and very fine rock dust. Local solar heating makes strong convection currents, which pick up the dust, blowing it here and there across the country. On such days life near the volcano is very trying. The clouds of fine ash in the air often obscure all objects more than twenty feet from the observer.

The coarser material ejected from the mouth of the crater forms the mass of the volcano. Some of the lumps of rock which form the framework of the cone measure six feet across. Most of them seem to have been solid when ejected; indeed, some may have been shot from the vent repeatedly only to fall back into the crater several times before attaining a trajectory which would let them descend on the sides of the cone or out beyond its base. It may be that in their milling about at the bottom of the crater's funnel they have mutually ground off some of the fine dust that rises in the banks of cloud flaunting high above the cone. Even although they have whirled over and over in the air and then charged like racing fireballs down the sides of the cone, their exterior is little shaped by the rotation. Many of them, however, shatter on impact. Some rare bombs, produced at times of unusual crater activity, when great bursts of red, liquid rock rose up to spread out and fall in showers that silhouetted the cone in fire, had liquid interiors. These crusted liquid blobs of lava cracked as they struck, to emit a little comb of glassy needles along the line of the split.

The earliest lava immediately assumed the appearance of a great



A LAVA FOUNTAIN erupts from a vent near the base of the volcano. This liquid lava flows like heaving mud, cooling quickly and forming large curds on the surface.



THE FIRST STAGE in the birth of a lava flow. A bed of glowing coals is here about to burst with its lava and run headlong down the slope.



THE CONE OUTLINED against the evening sky. The fiery lines on the lip of the cone are made by incandescent "bombs" ejected from the crater.



THE LAVA COOLS and becomes a brittle, crumbling wall of hot, loose stones

wall of tumbling blocks—the centre fluid but very viscous, and the outside enough cooled to be brittle. The first liquid flow was of brief duration and occurred in June 1943. After a few hundred yards of rapid advance, this material stiffened and became blocky. In February 1944 a new series of vents opened on the north-west side of the cone, showing fine fountains bubbling with sludgy but liquid lava for a period of several weeks. This lava flowed like heaving mud, cooling quickly and forming large curds on the surface which finally jammed and came to rest after travelling 50 ft. or so. The hot and still liquid lava beneath flowed on, carrying a welter of shattered black rocks on its surface, and gradually spread out into a great lava pool with a broadly advancing front. The actual front, however, was of the typical solid blocky type. Truly liquid red lava became visible at a distance from the source only when a tongue was advancing rapidly down a gully.

The advance of a lava stream at Parícutin, unlike those from volcanoes where the lava is more liquid, is not exactly like a flow of water. The initial flood of lava may spread over a large area, where most of it becomes stagnant and frozen. In time the current becomes canalised, and while the main flow is dead, a narrow line of current stays alive. Its serpentine route can easily be charted by the line of blue fumes which hover along its path. Sometimes surfaces crust solidly, and in March 1944 it was possible to walk almost at will over a flow that was still alive and flowing beneath our feet.

The visitor who goes to Parícutin today will see a sight somewhat different from that which excited earlier observers. Those who see it for the first time will still find it the most thrilling experience of their lives. The column of dust now usually drifts out like chimney smoke instead of rushing upwards and outwards in a



VAST BILLOWS OF VOLCANIC ASH pour from the crater

five-mile tower of doom. Occasionally a great explosion will hurl numbers of "bombs" a mile from the base, but generally the few that accompany today's explosions roll harmlessly down the volcano's sides. The lava escapes quietly for the most part, flowing almost imperceptibly down from a vent which it has lifted some 300 ft. in the air. Only an occasional snort shows that Parícutin might yet do bigger things.

The night view is still beautiful. Incandescent fragments describe graceful arcs through the sky, and are at times numerous enough to limn the cone in fire. The advance of the lava front is slow, but near the base the lava cascade glows nightly like a sinuous ribbon. A mile away, at the present lava front, a bright spot flares momentarily as a block falls out to expose a fresh face.

It is difficult to predict what the future holds for Parícutin, or to say when it will become quiescent. Explosions are much milder and less frequent. From time to time the activity even seems to stop entirely, now for only a few minutes at a time, but the interval could easily grow longer. Everything points to a gradual running down.



HOUSES ARE BURIED almost to the rooftops by fine volcanic ash, which piles up in drifts like a fall of snow

Is there a GRANDFATHER in the house?

By C. S. Jagger (African Department)

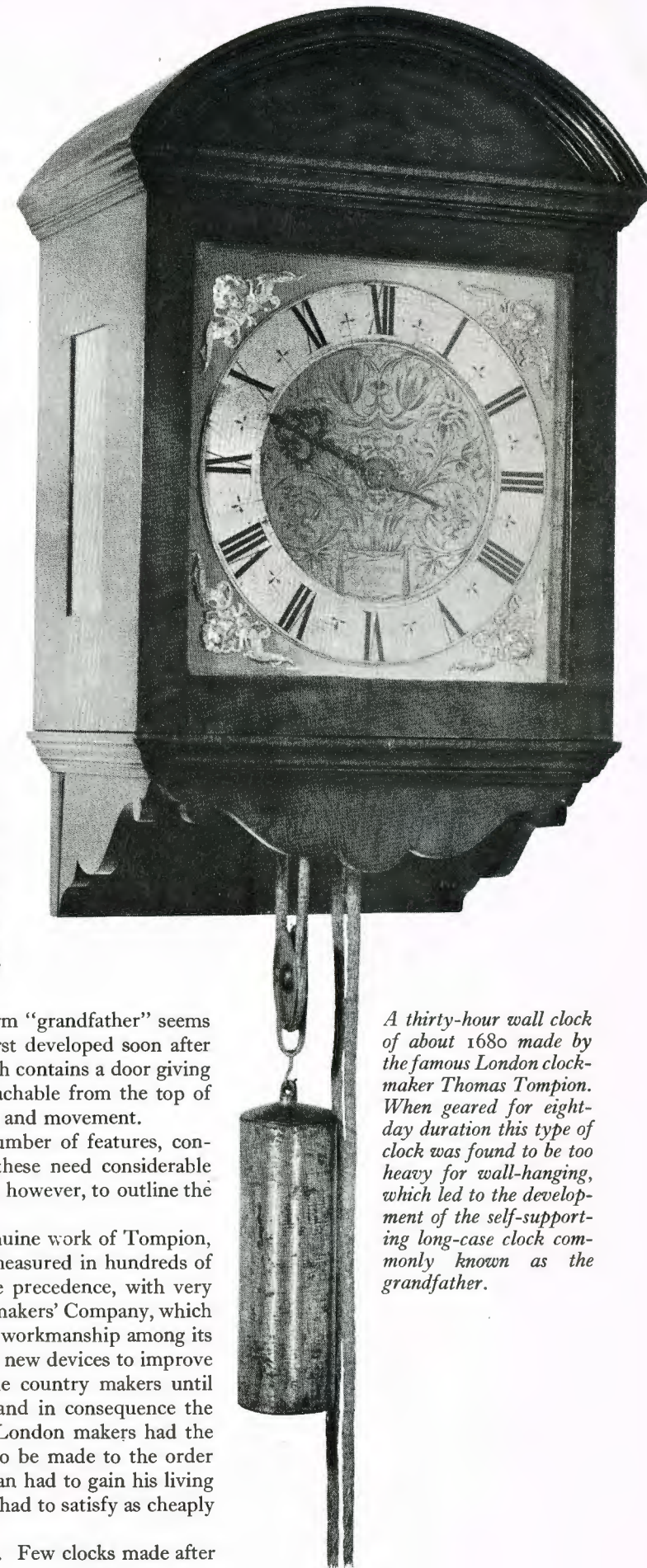
LET us suppose that you have an old clock of the grandfather type somewhere in your house. Grandfather clocks are quite a common household possession because, owing to their size, they are not easily thrown away even when broken down and in need of repair; and also because for many generations they have been the family clock, to be handed down from father to son. What is the history of such clocks, and is yours likely to be a valuable one and worthy of restoration?

The long-case clock, to give it its correct name—for the term "grandfather" seems only to have come into use early in the last century—was first developed soon after 1650. The major parts of a long-case clock are the trunk which contains a door giving access to the weights and pendulum, the hood which is detachable from the top of the trunk and encloses the mechanism, and of course the dial and movement.

The merit of an antique long-case clock depends on a number of features, considered both separately and in relation to each other, and these need considerable experience, on occasions, to evaluate correctly; it is possible, however, to outline the points which help to make a noteworthy clock.

Of first importance is the eminence of the maker. Any genuine work of Tompion, East, Graham or the other classic makers has a value to be measured in hundreds of pounds. Among less-famous craftsmen London makers take precedence, with very few exceptions, over the provincials. This is because the Clockmakers' Company, which only operated in London, maintained a very high standard of workmanship among its members and also supported and encouraged the invention of new devices to improve timekeeping. These inventions frequently did not reach the country makers until many years after their first adoption by the London men, and in consequence the former were invariably behind the times. In addition, the London makers had the opportunity of obtaining commissions for expensive clocks to be made to the order of wealthy persons, whereas the unfortunate country craftsman had to gain his living from the needs of his neighbours, which naturally enough he had to satisfy as cheaply as possible.

The period of the clock should be the next consideration. Few clocks made after



A thirty-hour wall clock of about 1680 made by the famous London clock-maker Thomas Tompion. When geared for eight-day duration this type of clock was found to be too heavy for wall-hanging, which led to the development of the self-supporting long-case clock commonly known as the grandfather.

1800 are likely to be of great value, as by this time the work of the individual craftsman was fast disappearing. Between 1740 and 1800, however, a great number of clocks of exceptional quality, both as to case and mechanism, were made. For some unknown reason, during the twenty years before 1740 production of long-case clocks seems to have been almost at a standstill. Going back from about 1720, however, we find ourselves once again in a classic period, and when we reach the seventeenth century we meet some of the most valuable clocks of all.

Note should next be taken of the condition of the case and movement. While the technicalities of a clock movement are possibly beyond the scope of the layman, nevertheless he can observe whether the space between the plates holding the wheels is well taken up with the wheels themselves, without any large empty areas; also whether there are holes in the plates which appear to serve no purpose. The presence of empty spaces and holes always suggests that part of the mechanism has been removed, probably because some earlier clock-jobber could not be bothered to repair it. As a result, a clock which once struck the hours on a bell as well as giving visible evidence of the right time may now only do the latter, and in consequence its value as an antique is considerably impaired.

Clock cases should be judged as pieces of furniture; in other words, the proportions should be pleasing, the construction sound and the condition good. Here again the London makers were much more effective than the provincials. Some of them even adhered rigidly to sets of proportions drawn up on architectural standards and in consequence produced some of the most beautiful clock cases ever seen. The general rule is that the trunk should be as slender as possible without making the hood look top-heavy or the base too large; although this sounds simple, in practice it takes great artistry to achieve.

It is important, by the way, that the period of case and movement correspond, for many old movements have been recased at a later date in their history, the original cases having probably been considered unfashionable.

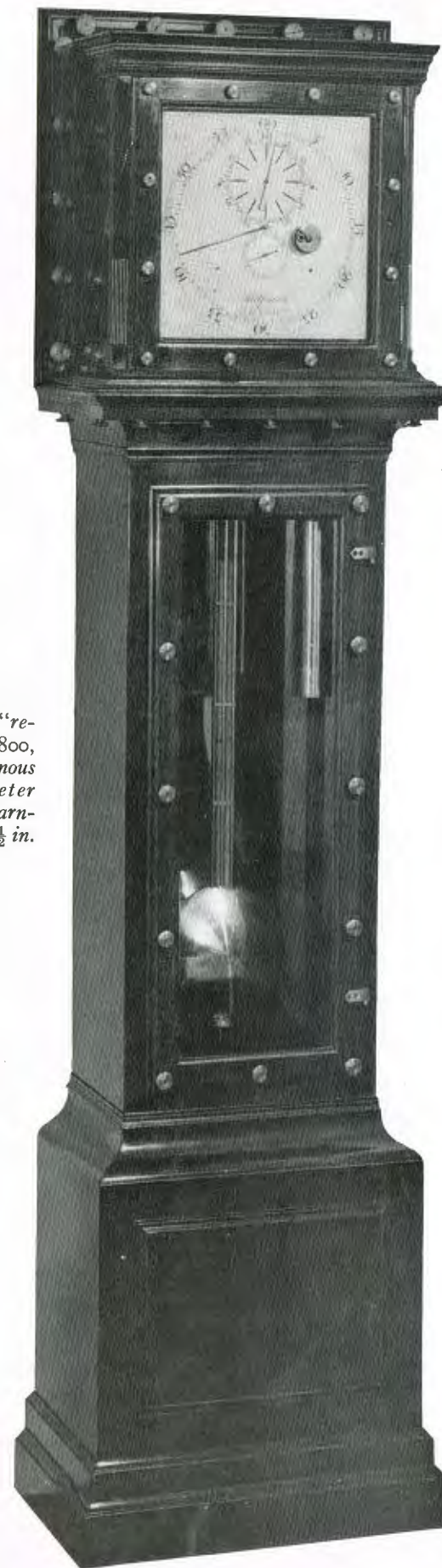
"Duration of going," which is the technical term for the length of time the clock will go at one winding, has great bearing on value. Thirty-hour clocks of all periods, except for a few made by the most illustrious makers, are little sought after; therefore an eight-day duration is a basic essential of a fine clock. Clocks with one month's duration are uncommon and valuable, and six-months and year clocks are even rarer. Long-duration clocks, incidentally, are often found to be the work of provincial craftsmen, and this is one of the exceptions to the rule of preference for London makers.

Finally, the complexity of the movement must be taken into account. Antique long-case clocks were often examples of very great ingenuity, and served many other purposes than simply to tell the time and please the eye. Subsidiary dials gave such extra information as the age and state of the moon, the state of the tide at specified points on the coast, the relation between the mean time shown on the clock and the time as calculated by the sun, and certain astronomical information. In addition, various types of calendar dials are known, the simple "day of the month" type, which has to be adjusted according to the differing lengths of the months, being incorporated in the majority of clocks. "Perpetual" calendar work, giving the month, day of the month and day of the week, and automatically taking into account not only long and short months but leap years as well, is also known, but rather rare.

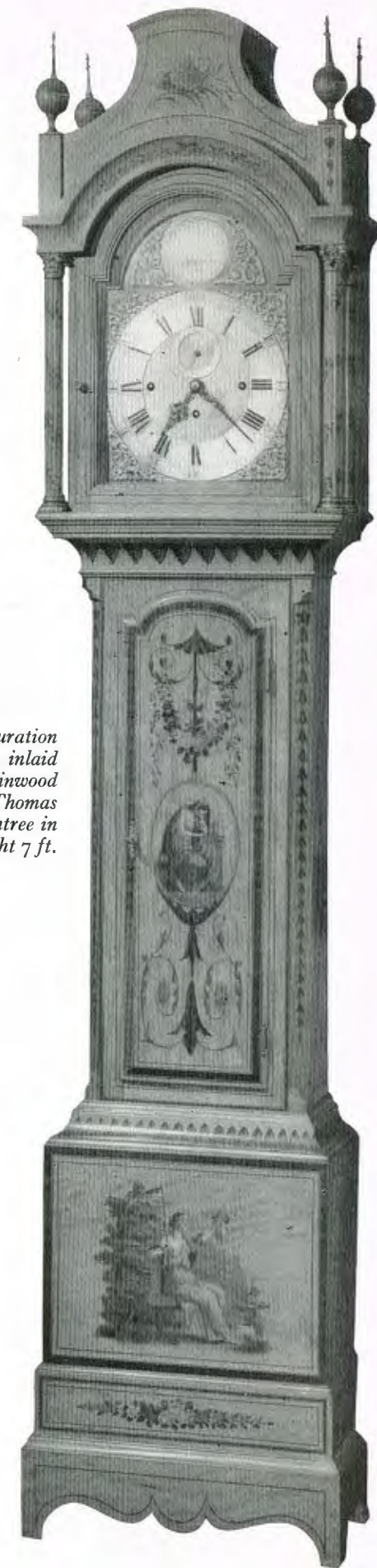
A month-duration clock of about 1700 in veneered mulberry case, made by Thomas Tompion. Height 7 ft. 8 in.



A month-duration "regulator" of about 1800, the work of the famous London Chronometer maker, Thomas Earnshaw. Height 6 ft. 3½ in.



An eight-day duration clock in veneered, inlaid and painted satinwood case made by Thomas Fordham of Braintree in about 1780. Height 7 ft. 9 in.



So far we have considered only those additions to the basic clock which appeal to the eye. On the audible side, many types of hour-striking and quarter-chiming and musical actions are known, some being much rarer than others; even repeating devices, which sound off the time on bells when a cord is pulled, are occasionally found.

From this it will be seen that, as a valuable antique, every clock must be assessed on its individual merits. What can be said for their purely functional use as timekeepers?

There is no better timekeeper for ordinary domestic use than the grandfather clock, provided that it receives reasonable attention; and the attention it will require, apart from regular winding, is very little. Once the movement has been over-hauled by a qualified craftsman, the oil will need to be renewed every four or five years and the movement taken to pieces for cleaning and such minor repairs as rebushing of pivot holes every twelve to fifteen years. If this is done, your clock will keep time for you to within one or two minutes a week and will go on rendering this service indefinitely; for there are plenty of clocks approaching their third century that still do just this.

While on the question of accuracy, it is as well to mention the other conditions which are necessary for a clock to give a consistently good performance. The greatest single factor which affects the timekeeping of a clock is change of temperature, for this causes expansion or contraction of the operative length of the pendulum, resulting in an alteration in its rate of swing. Therefore it is unwise to site a long-case clock in the hall beside the front door, where it is subjected to continual temperature fluctuation. Rather put it in a living-room, where a fairly constant temperature will be maintained.

Next, make sure that the clock case is rigid. Although most old cases are models of craftsmanship in solid construction, it is hardly to be expected that the passage of years has not produced some deterioration of the glue used and shrinkage of the joints. As a result, old cases tend to develop a sway which, if allowed to continue, will work against the swing of the pendulum and either slow the clock down or, in the worst cases, stop it altogether. The sway of a case is rarely visible to the naked eye or detectable by touch, but it can usually be seen when a plumb-line is suspended from one of the projecting corners of the hood.

The cure for this fault is simple: the clock should not be positioned flat against the wall but should be placed across the corner of a room, so that the rearmost vertical edges of the base are firm against the skirting board and the corresponding edges of the hood against the picture rail. If by any chance the width of base and hood are not the same, then it will be

necessary to anchor the clock case to the wall with a bracket, but this again can be simply arranged.

Dust should be excluded from a clock movement as much as possible by plugging up any cracks or holes in the back of the case and by sealing up with gummed paper the intersections where the hood fits on to the trunk. The paper can always be broken open when it is necessary to remove the hood, and replaced again afterwards. Also make sure that, if the weights of your clock are hung on gut lines, your clock-maker removes these at the first opportunity and substitutes the specially made wire lines for them. Gut is an extremely perishable material, and its unreliability, resulting in a broken line and a dropped weight, may cause your clock considerable damage.

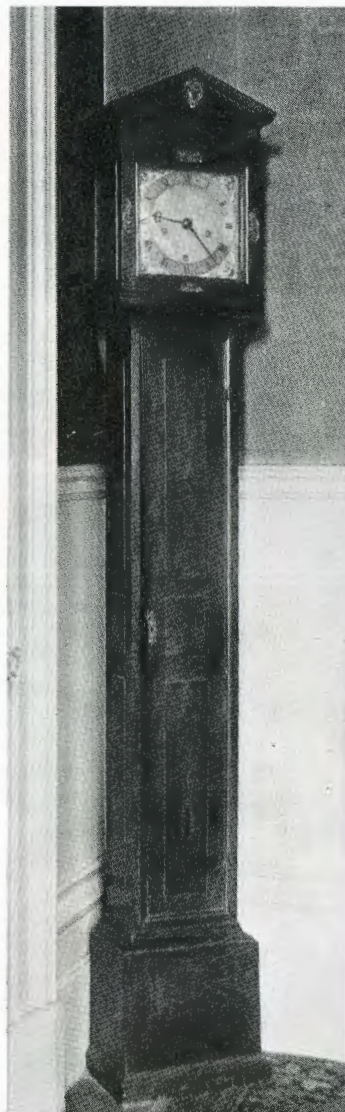
Attention to these points is advisable for the ordinary domestic "grandfather," but there is one special class of long-case clock in which it is all-important. This is the type known as a "regulator." In these the accent is entirely on accurate timekeeping and such clocks rarely have any subsidiary actions fitted, although occasionally they are found to have a longer duration than eight days. Regulators were originally designed either as workshop master clocks, by which the clockmaker regulated the rest of his stock, or as observatory clocks for astronomical work. They have a more efficient type of escapement than the ordinary long-case, as well as a device known as "maintaining power" which ensures that the clock keeps going even when the driving power of the weight is removed during winding up; usually they have a special type of pendulum which compensates itself automatically for temperature change. The accuracy of such clocks is of the order of seconds per week.

With the exception of my own clock, those that are illustrated here are valuable specimens from private collections. They show quite clearly that a fine clock must be a triumphant combination of art and craft; and they incorporate all those fine points which, even individually, we should be delighted to detect in our own family grandfather.

My own clock is a good example of the type that any of us might already possess or be able to afford.

Although I spent nearly four months of spare time in restoring this clock, I have no doubt that the labour was well spent: it keeps time to within two minutes a week, and will, I am confident, continue to do so during my lifetime.

Anyway, since a modern machine-made grandfather clock would cost more than twice what this one did a year ago, and since there has been no major alteration in the mechanism during the last two hundred and fifty years, surely there is an excellent case to be made out for getting the old clocks back into harness again.



A very early ebony long-case clock by Ahasuerus Fromanteel of London of about 1660. Height 6 ft. 4 1/4 in.

I.C.I. NEWS

CHIEF LABOUR OFFICER RETIRES

MR. John Hay retired at the end of the year after 38 years' service with I.C.I. and its predecessors, 20 of which he spent as Deputy Chief Labour Officer and three as Chief Labour Officer.

Mr. Hay joined the Calico Printers Association Ltd. in 1907 as assistant to the director in charge of production, costs and labour matters. In 1913 he joined Nobel's Explosives Company Ltd., Glasgow, as confidential cost accountant, and two years later was transferred to the technical department to take charge of labour matters under Mr. John Rogers. He became secretary to the Wages Committee of Explosives Manufacturers on its formation in 1918. Shortly after the formation of I.C.I. the Central Labour Department was set up in London, and Mr. Hay was appointed Deputy Chief Labour Officer under Mr. (later Sir Richard) Lloyd Roberts. During the war Mr. Lloyd Roberts was seconded for four years to the Ministry of Labour, and Mr. Hay temporarily took charge of the department. On 1st July, 1948, he succeeded Mr. Lloyd Roberts as Chief Labour Officer.

Mr. John Rogers, Chairman of I.C.I., writes:

"I find it somewhat difficult to write a sufficient appreciation of Mr. John Hay and the work he has done for so many years now in the world of labour relations and discussions.

"It was never an attribute of mine to remember dates or things of that sort, but I do know that it is many years since Mr. Hay came to work for me in the Nobel Glasgow office. He came from a place known at that time to nearly all inhabitants of the south side of Glasgow, Higginbotham's Mill; in conversation with Mr. Hay, I understood that Higginbotham's management must have been somewhat advanced in those days, because they had in Mr. Hay a person who endeavoured, within their sphere, to deal with labour, wages, and all such things, as matters of importance. Labour then

was perhaps looked upon as a rather doubtful but necessary material upon which to work.

"Soon I discovered that Mr. Hay had a real flair for dealing with labour, and while frequently a strong, silent man he could without much difficulty stand up and speak with the greatest authority before employers and trade union people.

"There were certain curious bodies, one called the Explosives Trades Employers' Association, of which I was president and Mr. Hay secretary: he was a power in those days. Later on, many of the firms concerned in this association disappeared, but Mr. Hay was still the force in the Nobel merger in labour matters.

"When I.C.I. was formed Sir Richard Lloyd Roberts, who was head of labour affairs in that large concern, asked if I could let him have some person to help him. Immediately I said 'Mr. Hay is the man you want: he is the best I have got and the best man I think I could get, and I am sure he will be able to do very great work.' This he did, as you all know. He had accuracy in

statement and the trust of all with whom he was concerned.

"As you know, Mr. Hay has for some time been Chief Labour Officer, and I have no need to tell you how well he operated in that position. He leaves us with our utmost good wishes for the future and the greatest regret on our part that we shall no longer have him in our councils.

"We often hear of labour and management being talked of as two sides; it is unique for a man in Mr. Hay's position to have the confidence—and complete confidence—of both sides, but he certainly had that.

"I can say no more than that I am sure we all wish him the best of everything in the future."

Mr. H. O. Smith, Personnel Director of I.C.I., writes:

"John Hay and I have known each other for a great number



of years, and he was by no means a stranger to me when Explosives Trades was formed in 1918 and he visited the Tuckingmill factory of Bickford Smith & Co., of which I was then manager, and discussed labour matters with me.

"Later on, in 1924, when I went to Witton, the contact became closer, and I can well remember the help he gave me then on the many labour problems which arose during that post-war period and the feeling of confidence with which he inspired me by his great knowledge of labour matters, systems of payment and the trade union organisation.

"Since 1936, when I came to London and was given responsibility for labour, our association has been intimate and very happy. It is no exaggeration to say that his knowledge of the history of I.C.I. labour relations is infallible. His knowledge too of trade union agreements, not only with I.C.I. but also with other industries, is encyclopaedic. When John Hay makes a statement its accuracy is beyond question. He engenders in those with whom he has to deal a trust which is given to few men. In trade union negotiations his work will stand as a model, for his integrity, courtesy and firmness, combined with his dry humour, have made it almost impossible to debate even the most contentious point in other than the right spirit."

Mr. Tom McCall, Chairman of the Workers' Representatives at Central Council, writes:

"It is with regret that the workers' delegates to Central Council realised that Mr. John Hay had reached retirement age and would not be with us at Blackpool again. My own association with him began in 1948 at Central Council, after I had been appointed chairman of the workers' delegates to the Council, when Mr. Hay congratulated me and remarked on our common country of origin. Mr. Hay always seemed to me a typical Lowland Scot. When he was speaking at the Council I thought I could detect in his quietness, lucidity and candour something of that early upbringing which many consider to be the backbone of Scotland.

"Above all other things he was a good listener, and his opinions on controversial matters were always worthy of attention. Whether we liked it or not, once Mr. Hay had spoken on a subject, and there had been time for thought on what he had said, we usually found ourselves agreeing with him. We realised, too, that when he spoke he summed the matter up with justice to all. I feel sure that these personal opinions are at the same time the general opinions shared by my colleagues at Central Council.

"We regret Mr. Hay's retirement because we found him to be always considerate and just in his arguments. He could also relax, and when business was over at Council he could settle in and tell an excellent story.

"Writing for my colleagues as well as myself, I would say Mr. Hay commanded our respect because we knew exactly where we stood with him and what we might expect. Men such as he have made a great contribution to the happy relationships which exist within I.C.I., and while we are confident that in his successor these relationships will continue, we are grateful to Mr. Hay for the years of pleasant association. Along with my colleagues I wish him well in his retirement, and I extend these wishes to Mrs. Hay also."

Finally, the following appreciation was contributed by Mr. Arthur Deakin, C.H., C.B.E., Chairman of the T.U.C., General Secretary of the Transport and General Workers'

Union, and a member of the I.C.I. Trade Union Advisory Council:

"On behalf of my own union and the other unions concerned on the trade union side of the Council, I would like to take this opportunity of expressing our appreciation of the co-operation and assistance we have received from Mr. John Hay during the years he has served as Chief Labour Officer with Imperial Chemical Industries.

"In all our negotiations with him we have found him as desirous as ourselves of securing a fair and equitable solution to the various problems which have confronted us.

"On his retirement from office we shall miss him, but would wish him well in the years which lie ahead and trust that he and his wife will enjoy good health and happiness and long be spared to enjoy a well-earned rest."

Mr. E. T. Grint appointed Chief Labour Officer

Mr. Hay is succeeded as Chief Labour Officer by Mr. E. T. Grint, who has been his deputy since January 1951.

Mr. Grint, who is 47, brings to the post considerable experience of labour matters both inside and outside the Company. At the age of 21 he joined the National Council of Dock Employers and helped in the labour negotiations of the shipowners and dock employers throughout the country. In addition to national negotiations, much of this work was done informally at the dockside itself, and it brought him into contact with such distinguished trade union officials as Ernest Bevin, Ben Tillett and Harry Gosling.

This practical experience stood Mr. Grint in good stead when he came to I.C.I. in 1929 and was appointed Assistant Labour Manager of Explosives Group. For some years he worked under Mr. Leonard Gale, who is now Personnel Director of Nobel Division. He was then transferred to the commercial side of Nobel Division, and after a varied experience in many of the commercial activities of the Division was appointed to the Division board in 1946 as director in charge of home sales and distribution. In September 1948 he came to London as assistant to Mr. John Hay.

Mr. Grint is a man of catholic taste in his hobbies and pastimes. Among his hobbies he counts almost everything but music, and he says of games that he has over the years tried his hand at many, always with more enthusiasm than success. He played cricket for Ardeer Recreation Club, and, in company with most of the Ardeer staff, took an active interest in contract bridge, which was introduced to Ardeer long before it came to England. His golf handicap in Scotland used to be 8 but is now 12, despite fairly frequent games at the Wilderness, near his home in Sevenoaks, Kent. He is married and has three children, a boy of 17 and girls of 15 and 11.

Sir Ewart Smith

It was announced on 4th December that Sir Ewart Smith had been appointed a member of the Scientific Advisory



Council which is responsible for advising the Minister of Fuel and Power on the scientific aspect of his duties.

As Technical Director of I.C.I. Sir Ewart is much concerned with fuel and power problems, whose magnitude can be gauged from the fact that I.C.I. uses 3-4 million tons of coal a year. Nor is this the first time that he has been called in to advise the government on such problems, for he was one of the original members of the Advisory Council on Scientific Policy which was formed in 1947 under Sir Henry Tizard.

ALKALI DIVISION

Prize Chrysanthemum Grower does it Again

In January 1950 a photograph was published in I.C.I. NEWS of Mr. John Towers, a laboratory dayman at Middlewich, and his giant chrysanthemum plant. Now, after an interval of two years, he has grown yet another prizewinning plant, even more magnificent than its predecessor. The latest model is not so tall, nor are its blooms so numerous (there being a mere 103 this time); it is the quality of the flowers which has amazed both judge and spectators. The type of chrysanthemum that Mr. Towers has used is a *Birmingham*, which has a dark red flower with petals whose under side is a contrasting gold. It looks particularly lustrous in artificial light. The plant was grown from a cutting taken in January 1951, and the blooms are above the third natural break.

As on the previous occasion, this leviathan was transported to the Holmes Chapel Flower Show, where it carried off the first prize in its class and also, because of its exceptional quality, a special prize. Another entry in the same class—a



Mr. John Towers inspects his prize chrysanthemum

similar chrysanthemum with 52 blooms above the second natural break—won Mr. Towers the third prize.

The secret of his brilliant success is still, of course, in the feeding of the flowers. To reach this height of perfection has taken Mr. Towers years of experimenting, in the course of which he has "killed hundreds of 'em." However, the secret is no longer his alone: his son has taken up the chrysanthemum cult this year, and after following his father's advice won a prize for outdoor chrysanthemums at the Bournemouth show in the autumn.

After Mr. Towers' chrysanthemum plant had completed a short tour of some of the Alkali works in mid-Cheshire, blooms were cut from it for distribution to sick employees and pensioners.

A Nonagenarian Pensioner

A retired Brunner Mond foreman, Mr. Frederick George Robinson, celebrated his 93rd birthday at the beginning of November. The first celebration of the day was at 7.30 in the morning, when he drank a cup of tea with a drop of rum in it. There was a party given in his honour later in the day, and a few friends and relations gathered together to wish him well. A large and beautifully decorated cake had been made for the occasion.

Mr. Robinson spent the last thirty-nine years of his working life at Brunner Mond's Malkins Bank Works before retiring in 1926. He has had twelve children, ten of whom are alive today, twenty-seven grandchildren and six great-grandchildren; one son is a tower man at Wallerscot Works.

Mr. Robinson's mind is still very alert, his hearing is good, and he does not complain of any aches or pains, although unfortunately he became blind about four years ago.



(Photo: Sandbach Chronicle)

BILLINGHAM DIVISION

Synthonia Hooker meets Springboks

When the rugby team of the combined counties of Northumberland, Durham and Yorkshire met the Springboks at Gosforth on 3rd November, two men with common interests which extended far beyond rugby were brought together. About one of them, Stephen Fry of the Springboks, who is an electrical engineer with A.E. & C.I. Ltd., a news item appeared in the *Magazine* last month. The other was the counties' hooker, Bob Malpas, who is an engineer in Billingham Division's Oil Works.

Bob Malpas was born and bred in Buenos Aires and he started playing rugby there at the age of 13 while attending St. George's School. When he came to England in 1945 he went to Durham University, and he played as hooker for them until 1948, when he joined Billingham Division. He was sent to Nottingham on a post-graduate course in engineering, and while he was there played for Nottingham Club and got his first county cap with the combined Notts, Lincs and Derby team, in which he played for three seasons.

When Bob Malpas returned to Billingham in 1949 he joined Synthonia's first XV and in the same year was selected to play for Durham County and gained his second county cap. He has played for both teams ever since, and for the last two seasons has captained the county side. At 24 years of age he has ample time to win even higher rugby honours.

On the Sunday after the game Bob Malpas and Stephen Fry met to discuss not only rugby but engineering, and Bob Malpas showed the South African visitor round Billingham Works.

A Loofah grows in Prudhoe

For most of us a loofah is a thing used for scrubbing the back at bath-time. Nor did the word mean anything more to Mr. Jack Wilson of Prudhoe until he met Mr. N. B. Tendolkar of Sindri.

Some two years ago a party of Indians came to this country to be trained at I.C.I. factories in readiness for the start-up of the Indian Government's sulphate of ammonia factory at Sindri. Among the trainees who went to Prudhoe was plant foreman Tendolkar. For part of the time he was working on the same shift as Mr. Wilson, who is acting foreman on

But Jack Wilson is a keen gardener who has won prizes at all the local shows, and he intends to keep on with his loofah-growing until he can grow them as long as they do in India—about twenty inches. Whether he will eat them or use them for bath night he doesn't yet know.

DYESTUFFS DIVISION

Research Director Appointed

Mr. J. D. Rose, M.A., B.Sc., formerly an associate research manager of Dyestuffs Division, was appointed Division director responsible for research on 8th November.

Mr. Rose, who is a Member of the Chemical Society Council, received the early part of his education at Rotherham Grammar School and later went to Jesus College, Oxford, where he gained first-class honours in Natural Sciences (Chemistry) in 1932. From 1932 to 1934 he was engaged in post-graduate research at Oxford with Sir R. Robinson, and from 1934 to 1935 worked with Professor L. Ruzicka at the Federal Technical High School in Zürich. He held a fellowship of the Salters' Institute of Industrial Chemistry from 1933 to 1935.

Mr. Rose joined the Resins Section of the Research Department at Blackley in September 1935, where he remained until 1939. For the next four years he worked in the Synthetic Rubber Section, the Exploratory Research Section, and Techno-Commercial Department. He became section head of the Exploratory Research Section in 1943.

In 1949 he was appointed an associate research manager in charge of the General Organic Chemicals Division of the Research Department.

A Blackley Model-maker

Having read in the *Magazine* of model-making activities in other Divisions, Mr. Arthur Shaw, a draughtsman in the Engineering Department at Blackley Works, sent us this picture of one of his model ships. She is the *Calypso*, a general cargo carrier, 45 in. overall. She is built entirely from yellow

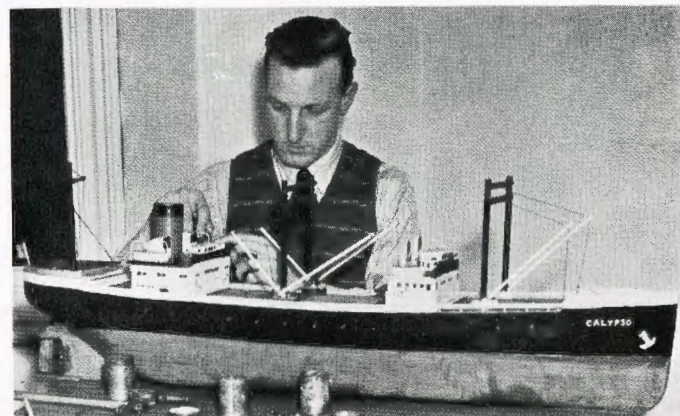


Mr. Jack Wilson at work in his greenhouse

sulphate process, and in slack periods during the night they would yarn about the habits and customs of their own countries. One night the conversation turned to gardening—Mr. Wilson's hobby—and Mr. Tendolkar promised to send him some seeds of Indian native plants when he returned home.

When the seeds arrived in due course they included a dried loofah, a cucumber-like vegetable which the Indians eat as a salad. It was full of seeds, which Mr. Wilson at once tried out in his greenhouse.

The first two attempts were not very successful, the plants being dwarfed by the cold. This year, however, Mr. Wilson had better luck, and one of the fruits—or should it be vegetables?—grew to a length of eight inches.



pine, and the only fittings which Mr. Shaw did not make himself are the screw and the six-volt electric motor which drives it. *Calypso* took him several years of intermittent work to build. He has also made a 30 in. cross-Channel steamer and a galleon.

Before he joined I.C.I. two and a half years ago Mr. Shaw taught mechanical engineering subjects at Stretford Technical College, Manchester, and he still teaches there in his spare time.

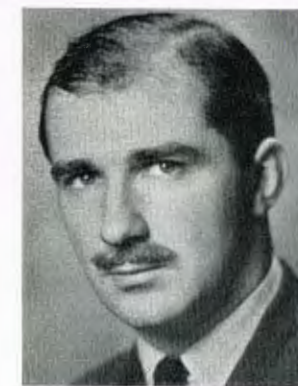
METALS DIVISION

Division Board Changes

At the end of the year the Division lost, through the retirement of Mr. A. M. Kempson, Joint Managing Director, one of its best-known personalities. Mr. Kempson joined Elliott's Metal Co. Ltd. in 1907. In 1911 he changed over from clerical work to the production side, becoming assistant works manager and later works manager. The years from 1924 to 1931 he spent with British Copper Manufacturers Ltd. of Swansea, which became a part of I.C.I. in 1928. In 1931 Mr. Kempson moved again—this time to Kynoch Works as deputy production manager. He was appointed joint managing director in 1945.

In his long career with the Company Mr. Kempson earned a notable degree of respect and affection, particularly in the three areas where he spent several years. An extremely popular Works Council chairman and much in demand at social functions, he imparted a characteristic friendliness to his activities in many spheres of factory life, and this quality no less than his technical knowledge and experience will be keenly missed.

The appointment to the Division board of Mr. St. J. Elstub has been announced. Mr. Elstub, who becomes Wrought



Mr. St. J. Elstub

Metal Production Director, joined the engineering staff of Billingham Division in 1934. During the war he was on operational duties with the R.A.F. and then spent a year as a flying instructor before being seconded to the Ministry of Supply as armament officer to carry out design work on new weapons. On demobilisation he became superintendent of rocket design at the M.O.S. factory, later being promoted to chief engineer and deputy chief superintendent. He rejoined I.C.I. in 1947 as assistant to the chief engineer,

Metals Division, and was appointed deputy chief engineer in 1949.

Mr. G. H. Rogers

We announce with deep regret the death of Mr. G. H. Rogers, production manager of the Division's South Wales factories. Mr. Rogers had been in indifferent health for some time, but his death, within a month of retiring, came as a shock to all who knew him.

Mr. Rogers' service with I.C.I. and its predecessors dated back to 1904. He started as an apprentice with the King's

Norton Metal Co., and after nine years was appointed assistant works manager. From 1921 to 1923 he acted as assistant production manager in the rolling mill at Kynoch Works, and after a further spell at King's Norton returned to Witton, where, between 1931 and 1946, he was successively technical manager, assistant production manager, strip and sheet mills, and production manager, strip, sheet and light alloy manufacture. In 1946 he took up the appointment in which he was serving at the time of his death.

Few men can have excelled Mr. Rogers' reputation for sound judgment, fair dealing and unfailing kindness. He earned the affection of all who worked with him, and his many friends will miss his quiet strength and good-natured humour for a long time to come.

A Double Coincidence

In the November issue of the *Magazine* we published an account of how Mr. Fred Lawson, of Leathercloth Division, and two other men tackled an armed bandit in Manchester, all three subsequently receiving the British Empire Medal for their brave action. With the citation in the supplement to the *London Gazette* there appeared the following description of the chase:

"Walter B. Hannah chased the man through crowded thoroughfares and caught and held him. The man pulled out a revolver and forced it against Hannah's stomach. Hannah pushed aside the revolver, and Robert Glass, a passer-by, went to his assistance. The man struggled and broke away, but Hannah and Glass followed and called out that the man was armed. Fred Lawson joined in the chase and jumped on the man from behind, and he and Glass overpowered him. The revolver, which was found to be loaded in six of the seven chambers, was thrown away by the man when he was caught."

An amazing sequel to the story has now come to light. It is contained in a letter we received from none other than the first passer-by to go to Mr. Hannah's assistance, Mr. Robert Glass, part of which is quoted below:

"I am writing this letter to tell you something which will, I think, give you a surprise. When I read the November issue of the *I.C.I. Magazine* I noticed I was mentioned along with Mr. F. Lawson of Leathercloth Division as having received the British Empire Medal for our action in Manchester on 26th January, 1951. I would like you to know that I am one of the pensioners at the Broughton Copper Works of I.C.I., for whom I worked for many years until I had an accident to my back in 1938. I worked under Mr. Jacques, Mr. W. Prince and Mr. Brian. My work was on the saw in the Seamless Copper Mill. I enjoyed it, but I had to give it up owing to an injury."

Mr. Fred Lawson had no idea, until he was told of it, that one of the men he helped was an I.C.I. pensioner; nor, of course, did Mr. Glass guess until he saw the November



Magazine that Mr. Lawson was a member of his old company.

Mr. Glass received his medal from the Deputy Lord Lieutenant of Lancashire, Mr. Ashcroft, at Manchester Town Hall. One of his most prized possessions besides the medal itself is a letter sent him by His Majesty the King, which says:

"I greatly regret that I am unable to give you personally the award which you have so well earned. I now send it to you with my congratulations and my best wishes for your future



(Photo: Associated Newspapers)
Mr. Robert Glass shows his British Empire Medal to his son

happiness." He also received a great number of congratulatory letters from friends and one from Lord Woolton, chairman of Lewis's Stores, where Mr. Glass works. He was actually at work when the incident occurred which won him his award.

Mr. Glass lives in Salford, with his wife and 15-year-old son. Broughton Copper Works is not far away, and he still sees something of the friends he made there in his twelve years as a tube sawyer and examiner.

It may be thought that this coincidence by itself was unlikely enough, but the incident contained another. Mr. Walter Hannah, the third man involved, was recognised afterwards by Mr. Lawson as being far from a complete stranger: the two had been together in the same prisoner-of-war camp in Germany!

PAINTS DIVISION

Two Brave Men

Two jobs requiring considerable dexterity are being carried on in the Division by two men who have achieved their skill in spite of total blindness.

The blind men are Mr. L. J. Allen and Mr. S. T. Willmott. Mr. Allen is a Dictaphone typist at Slough. For more than twenty years before he joined the Division in 1944 he had considered himself unemployable. In his own words, the step of taking this job assumed the proportions of a great adventure. He had no more experience of typing than could be gained from the use of an antiquated typewriter, which he had taught

himself to use from a braille copy of a typist's manual. He was given the opportunity to become a Dictaphone typist, and today he fills an important job in the Slough typing pool.



Mr. Allen at his machine in the Slough typing pool

Mr. Allen's great hobby is music; members of Slough recreation club's gramophone section have profited more than once from his wide knowledge of the subject.

Mr. Willmott, switchboard operator at Smethwick, became a registered blind person when he was 28 years of age. When his sight began to fail him he spent about six months at America Lodge at Torquay, learning to read and write braille and to type. However, neither typing nor the usual manual work for blind persons appealed to Mr. Willmott as a means of earning a livelihood. He therefore went to Oldbury Grange, Bridgnorth, to train as a switchboard operator. He passed his tests in a month, and after gaining more experience spent a short time on the switchboard with the National Institution for the Blind in London and then fourteen months on similar work with Stepney Labour Exchange. He became switchboard operator at Smethwick in May 1944.

Mr. Willmott's outside interests include amateur dramatics, reading from braille, serious radio listening, and gardening. He is fond of walking, but some of his happiest moments are spent in discussing modern cars. He also gives part of his



Mr. Willmott at the Smethwick switchboard

time to the duties of hon. treasurer of the Birmingham branch of the National Federation for the Blind.

Both Mr. Allen and Mr. Willmott are married, and Mr. Willmott has two daughters.

Commissionaire Walking Champion

Mr. Frederick Rickards, commissionaire at Slough Factory, took 24th place out of 164 entries in the 31-mile championship of the National Road Walking Association, held last year at Brighton. His time was 5 hours 19 minutes 58 seconds.

Competing in his first walking race at the age of 15 in March 1915, Mr. Rickards covered the distance from Windsor Castle to Fulham in 4 hours 44 minutes 45 seconds. Since then he has had some outstanding successes as a walker.

Before coming to I.C.I. early in 1947 Mr. Rickards served with the Metropolitan Police for twenty-five years. During this period he won the All-British Police Long Distance Walking Championship eight times.

PLASTICS DIVISION

Mr. D. Gordon Retires

Mr. Douglas Gordon, Plastics Division Joint Managing Director, retired on 30th November after nearly 38 years' service with I.C.I. and its predecessors.



Mr. Gordon joined the New Explosives Co. Ltd., London and Stowmarket, a subsidiary of Nobel's Explosives Co. Ltd., Glasgow, in 1914. After the 1914-18 war the explosives company at Stowmarket became a lacquer works and developed into the large paint manufacturing concern of Nobel Chemical Finishes Ltd. and Naylor Bros. (London) Ltd. Mr. Gordon became an assistant secretary and then accountant of both companies; later he was made trade sales manager. When I.C.I. Paints was formed from Nobel Chemical Finishes and Naylor Bros. (London) Ltd. he was appointed joint general manager and Division director. After spending three years at I.C.I. Head Office, Nobel House, during the 1939-45 war, Mr. Gordon became joint managing director of I.C.I. (Lime) Ltd. and in 1945 a joint managing director of Plastics Division.

SALT DIVISION

Winsford's first Citizen

Mr. John Jackson, an assistant stock-checker at Winsford Works, is also chairman of Winsford Urban District Council. In attaining the position of Winsford's first citizen he has travelled a hard road. His father was a bricklayer who earned 18s. a week and who died when John Jackson was a baby. John joined the Company at Winsford Works in 1913, and soon proved that he was able to command the trust and confidence of those around him. He was elected treasurer of the local Saltmen's trade union, the Winsford Salt Makers' Association, and has held the post for twenty-two years. He is a works councillor and a trustee of the Workers' Pension Fund, and has served on the Central Council and been a member of the committee of management of the Workers' Friendly Society. He was elected a town councillor in 1946 and found his experience of committee work within the Company invaluable.

As a local preacher—a calling for which he began to train as a youth—chapel society steward, and Sunday-school teacher he has rendered yeoman service to the cause of Methodism in Winsford. He has been a life-long member of the Central Methodist Church there and, remembering his own early struggles, he has been specially interested in the Church's schemes for youth and child welfare.

Sport has attracted him too. As a youth he distinguished himself in local circles as a swimmer and footballer. Like many saltmen Mr. Jackson is a keen bowler, and he is a

member of the Over Recreation Club's first team, which competes in the top section of the Mid-Cheshire Bowling League.

Mr. Jackson was elected chairman of the Winsford Urban District Council last year, and his term of office lasts until May this year.



WILTON WORKS

Power Station Operator appointed J.P.

Mr. J. B. Hepburn, assistant control-room operator in the new power station at Wilton, has recently been appointed a Justice of the Peace for the North Riding of Yorkshire.

Mr. Hepburn joined the Company in May 1950 as an electrician on construction work. His colleagues know him for an enthusiastic trade union member, who has served his union for the past twelve years as secretary of the South Bank branch. In future he will be an extremely busy man, for in addition to his duties as a J.P. and as union secretary he must find time to sit as a member of the Court of Referees and a member of the Appeals Board of the Ministry of Labour.

Harmonica Player goes to Town

Mr. Tom Smith, a Plastics Division maintenance storeman, recently appeared in the B.B.C. programme "In Town Tonight" and played a harmonica solo. It was not his first experience of broadcasting by any means. Seventeen years ago he formed a harmonica band with some of his friends from Yorkshire. He took the band to London, "knocked on the doors of Broadcasting House" and succeeded in gaining a broadcast in "In Town Tonight." This opened the door to more broadcast dates, as well as to theatre and cinema performances and a feature for a "Pathé Pictorial" film.

Tom Smith has won several medals for his playing and won the National Harmonica Solo Open Competition at Newcastle



in 1938. He is at present the North of England representative to the advisory committee of the National Harmonica Song Band League. His band has now dispersed, but he himself plays to his workmates at Wilton every lunchtime.

A.E. & C.I.

Mr. G. Ormsby Pearce

Mr. G. Ormsby Pearce, Managing Director of African Explosives and Chemical Industries Ltd. for the past eighteen years, resigned recently.

Mr. Pearce joined the British South African Explosives Co. Ltd. in London in 1912 and was appointed assistant manager under his uncle, the late Mr. F. C. Bourne, the manager and secretary. He enlisted in the Westminster Dragoons and in the 1914-18 war obtained a commission in what was then the Royal Field Artillery, served in France, was awarded the Military Cross and was wounded at Delville Wood in 1916. In 1920 he succeeded Mr. Bourne as manager and secretary of the B.S.A.E. Company, and when the Kynoch Natal interests were merged with the B.S.A.E. Co. he was put in charge in London. When these interests were in 1924 merged with Cape Explosives Ltd., a subsidiary of De Beers Consolidated Mines Ltd., to form African Explosives and Industries Ltd., he became London secretary, and towards the end of 1932 he sailed for South Africa to take up the appointment in Johannesburg from 1st January of managing director.

Mr. Pearce visited the U.S.A. after his retirement, but has now returned and is making his home in England.

CENTRAL AGRICULTURAL CONTROL

Foreman beats Horsepower with Horses

Some notable individual successes in local competitions were referred to by the farm manager, Mr. T. Walton, when the agricultural and horticultural staff of Jealott's Hill Research Station sat down to their annual harvest supper on 9th November. Mr. Walton mentioned as being particularly noteworthy the feat of Mr. Robert Coyle, farm foreman, in winning the 1951 ploughing championship of the Royal Forest Agricultural Association. When he entered the competition Mr. Coyle had been out of touch with ploughing for more than eight years, but with a pair of Clydesdale geldings at the plough he beat some thirty tractor ploughmen. One of them was his son Robert, who also works at Jealott's Hill, and who came third in the competition.

Other 1951 successes referred to by the farm manager included the first, second and third prizes in the Cottage Gardens competition, first and third prizes in the stacking competition, and second and third prizes in the thatching competition, all run by the Royal Forest Agricultural Association.

Mr. Walton also reviewed the joint achievements of the year. For the latter part of the evening, and for the first time since the inception of the Jealott's Hill harvest suppers, wives joined the party for dancing and games.

MAGADI SODA CO. LTD.

African Works Council set up at Magadi

Some eighteen months ago a works council composed of African workers and representatives of the management was established at Lake Magadi. There are eight African members, elected half-yearly, and the main function of the Council is to provide a point of contact between management and workers

in respect, particularly, of the conditions under which Africans carry out their work and generally to consider measures to improve recreational facilities and amenities. It also aims to encourage co-operation in increasing efficiency and in dealing with suggestions for improvements in works operations.

The inaugural meeting of the Council was held in May 1950, and it is evidence of its vitality that eighteen meetings have



An African Works Council badge is presented to Mr. Otuba by Mr. F. J. Purcell, general manager of the Magadi Soda Co. Ltd.

been held in as many months. The language difficulty is surmounted by having all proceedings and minutes translated into English and Swahili, the latter being the common language of East Africa.

At its fourth meeting the Council entertained Mr. A. Kneller, Kenya Government Deputy Labour Commissioner, and Mr. J. Patrick, Kenya Government Industrial Relations Officer, both of whom congratulated the Council on its work.

THE FEBRUARY MAGAZINE

The highlight of the February issue is our four-colour photography of the Lake Shed at the Blackley Works of Dyestuffs Division. It is here that the final stage in the making of pigments takes place, and our photographer has taken some fine pictures of this colourful process. Contrasting with these photographs are some Horowicz drawings of metalworkers in action at the Selly Oak Works of Metals Division at Birmingham. Mr. Horowicz's drawings are directed chiefly at the older methods of production in which the skill of the craftsman has not yet been entirely superseded by the power of the machine.

On the lighter side of the Magazine Mr. L. G. Lawrie, Publicity Chief of Dyestuffs Division, has written a very informative article on how to plan out a garden to provide colour all the year round for the expenditure of not more than £10. And two pages are devoted to the winning snapshots of the summer photographic competition.

HOW TO CLIMB MOUNTAINS AND INFLUENCE PEOPLE

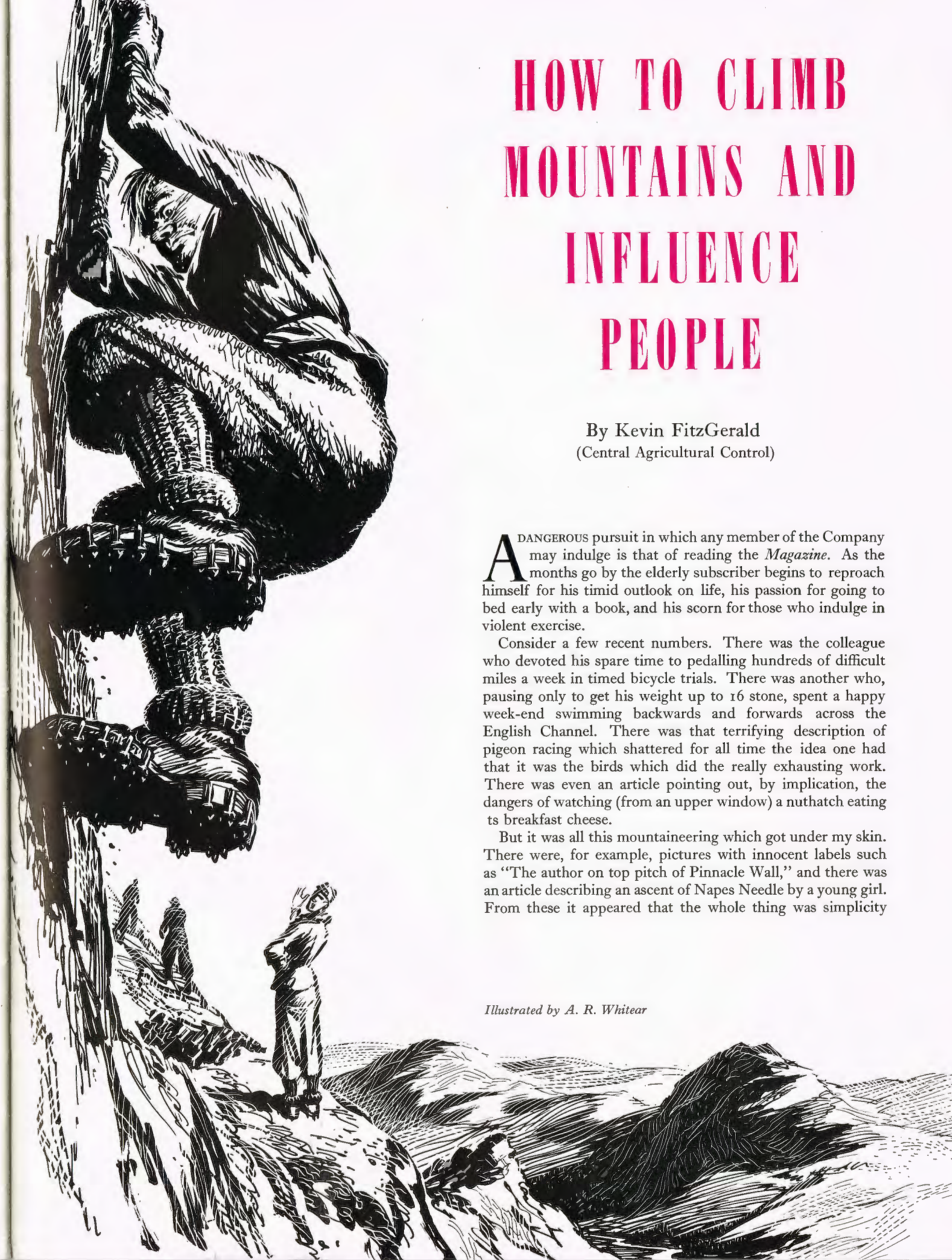
By Kevin FitzGerald
(Central Agricultural Control)

ADANGEROUS pursuit in which any member of the Company may indulge is that of reading the *Magazine*. As the months go by the elderly subscriber begins to reproach himself for his timid outlook on life, his passion for going to bed early with a book, and his scorn for those who indulge in violent exercise.

Consider a few recent numbers. There was the colleague who devoted his spare time to pedalling hundreds of difficult miles a week in timed bicycle trials. There was another who, pausing only to get his weight up to 16 stone, spent a happy week-end swimming backwards and forwards across the English Channel. There was that terrifying description of pigeon racing which shattered for all time the idea one had that it was the birds which did the really exhausting work. There was even an article pointing out, by implication, the dangers of watching (from an upper window) a nuthatch eating its breakfast cheese.

But it was all this mountaineering which got under my skin. There were, for example, pictures with innocent labels such as "The author on top pitch of Pinnacle Wall," and there was an article describing an ascent of Napes Needle by a young girl. From these it appeared that the whole thing was simplicity

Illustrated by A. R. Whitear



itself, full of poetry and beautiful thoughts. I decided that it must be rock climbing for me and that I had better betake myself to the mountains.

Of course, it is the easiest thing in the world to get up a mountain. All you need are youth, nerve, great skill, legs of iron, plenty of long holidays, an infinity of practice, a marked distaste for any sort of physical comfort, and some friends. You must not smoke or drink, should prefer a sandwich and an apple to any other sort of meal, and regard a bed as a luxury for old men or morons and complete exhaustion as the crown and glory of any given day.

But given perhaps one of these essentials (some friends) you will be permitted to essay the thing called "A short walk over the hill before we try a simple climb." And this is what will happen to you.

First you will put on your boots. These, which secretly fill you with pride, are enormous affairs weighing about 10 lb. each, the soles being smothered with great pieces of soft iron called clinkers. You do not understand why these should be necessary for "a short walk over the hill" (the man who sold them to you called them climbing boots and charged a great deal of money for them), but you put them on and announce that you are ready. In fact you are not. You are told at this point that you are unsuitably clad and will by no means require the collar and tie you have put on for this country stroll, or the walking stick you are holding. You attempt to return to your room and are informed that "In this sort of hotel nailed boots must not be worn beyond the chalk line on the floor over there." As you begin sadly to take off your carefully laced boots somebody will call out "Don't bother, just dump all that stuff round your neck in the rope room." Thus you discover the real chamber of horrors and begin to wish that you had gone to Brighton. There is a locker in the rope-room with your room number on it. But there are also ice axes (although you are in the heart of Wales), rows and rows of boots far more fearsome than your own, coil upon coil of rope, and piles of clothing of the sort you have only seen before in films dealing with Arctic exploration. Some of this you are

now lent, and you reappear in the hall, feeling a trifle self-conscious, in a garment called, you learn, an "Anerack." Surely you think all is now ready for this "short walk over the hill." At this stage everybody sits down.

The walk, it seems, will be a trifle longer than you had imagined; in a few minutes the kitchen staff will arrive with something called "the packed lunch." You fill in this interval by studying the photographs in the hall. These are of two kinds, the first of men twenty to thirty years younger than you are yourself clinging to sheer rock faces hundreds of feet above ground and the others of men about your own age. All the latter carry a simple obituary notice and the name of the cliff or mountain from which the climbers fell. "I thought," says the leader of the party at this stage, "that as it is a first day and FitzGerald is new and (he drops his voice to a shocked whisper) not absolutely fit, we ought to take everything a bit easily. Anything like a climb is out of the question, and I think the best thing to do will be to take the car up the road, stroll along the Pig Track and over Crib Goch and then see how he feels."

At once there is disagreement. "That's dull," everybody says; "and besides, we could almost be back for tea if that's all we are going to do." It is at this stage that you throw away the cigarette you have lighted absent-mindedly and because it is just after breakfast. Before you have declared your resolve to stop in and write an urgent letter you have just remembered, the packed lunch arrives and it is too late. You look at the packed lunch. It is a packed sparrow's lunch. You put it into your Anerack pocket and follow the rest of the party. Everybody sits down on the seat outside the hotel.

"It might be better on a first day," says the leader, "to stroll over the Miner's Track and down to Ogwen. I always think that gives the best view of Tryfan."

"Too easy," is the general opinion about that. "Besides, what shall we do with him then?" Him, of course, is you, and you begin to suggest that you are a bit of an incubus and had better stay at home.

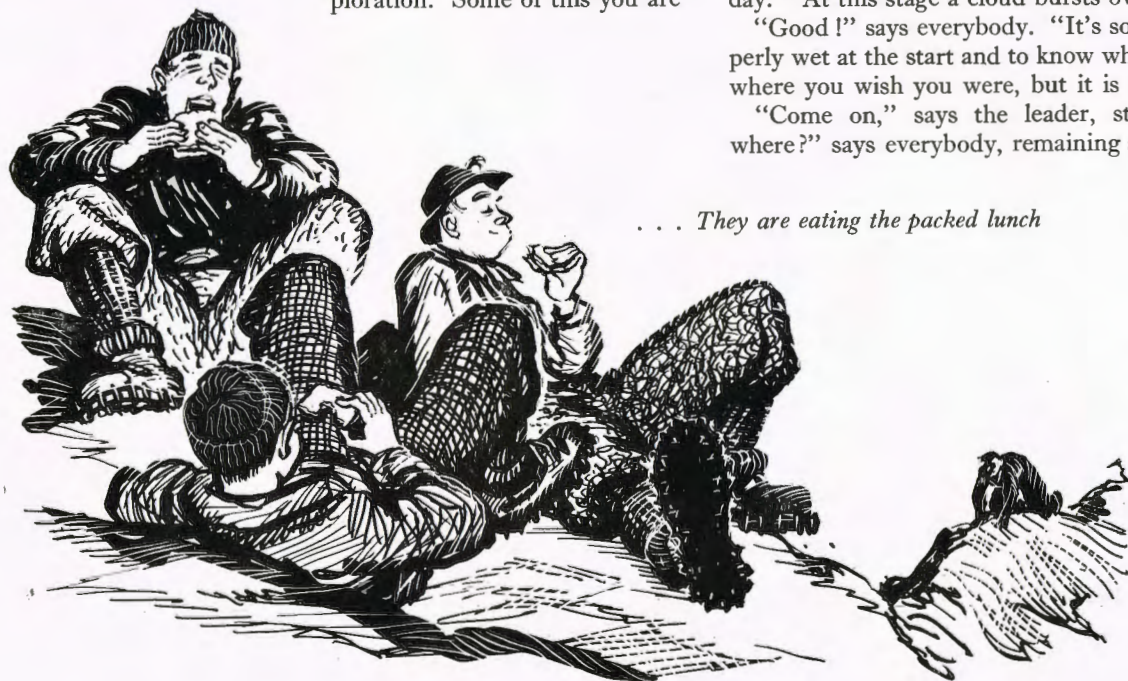
"My dear chap," says everybody at once, "not at all. It's just that we are all so anxious for you to have a really good first day." At this stage a cloud bursts overhead.

"Good!" says everybody. "It's so much better to get properly wet at the start and to know where you are." You know where you wish you were, but it is too late now.

"Come on," says the leader, standing up. "Come on where?" says everybody, remaining seated. "Pig Track first, and then we'll see."

Everybody slouches out to the road. You observe that all left hands are carried in trousers pockets and that everybody except you is swinging from the hip and slightly turning in his toes. You find yourself murmuring "there's a wind on the heath, brother," and resisting a tendency to burst into song. This is short-lived, as you discover that the road is all uphill and that passing cars

... They are eating the packed lunch



are in second or bottom gear. You are in your only gear and are already lagging behind. You realise that your boots are nonsense and that a decent pair of shoes would be just the job. At this stage the leader turns off the road, vaults over a couple of walls and begins to walk straight up the great mountain which has been looming above you for some miles. You would like to ask someone where they think they are going, but there is no one to ask. Your other companions are also well up the hill. You start to climb over the first wall, tearing a great sliver out of your trousers and another out of your knee before pitching forward over it on to your head, and you come to the second a trifle shaken. You decide to vault it. As you pick yourself up there is a simultaneous cry from three distant voices of "Are you all right?" Yes, they are always looking back on mountains, just as they are anywhere else, if you are making a fool of yourself.

You pick yourself up and plod on towards the three dots above you. As you stumble and slip and fall, as your ankles twist this way and that on the loose stones and bits of rock which are everywhere, you begin to bless the boots. If only, you think, we could get to this Pig Track things would be a bit easier.

The three dots are now seen to be lying down waiting for you. Their backs are against a huge cliff. They are eating the packed lunch. It is already past midday, but you are past everything and do not care. "When do we get to the Pig Track?" you gasp. "You are on it," they say. It is enough.

You sit down beside them. They instantly rise. "We must get on," they say. "If it hadn't been for you we would be half-way round the Horseshoe by now."

"Just a minute," says the leader. "It's ages since I tried this." Everybody turns and regards the cliff against which you are sitting. It is apparently not a cliff but something called a small outcrop bearing on its surface something called a problem. This turns out to be a crack in the rock, going straight up in the air for a hundred feet. It is at no point wide enough to admit the hand. The problem is to climb up it. Everybody in turn goes up about forty feet, each one as he slithers back announcing that it is still very pretty indeed until after the difficult move, when of course the interest stops.

As all three have apparently walked up the face with slow, rather beautiful leg and arm movements a sudden madness descends upon you. As your companions turn away you walk up to this crack and put the toe of your boot into it about a foot from the ground. Suddenly you are nearly six feet up and reaching for the next hold. At this stage you look down. You are not six feet up but nearly two thousand. The whole valley is spread out below you. You cling to the rock. You would cuddle it if you could. You try to get down but you cannot. You are there for life or until you fall helpless and screaming into the depths.

"Jump!" says the voice of the leader. You look down again. There he is, with one hand in his pocket, the other, at half-stretch, on the heel of your boot. You blush, and jump.

"Sorry about all that," you mumble. "Not at all," he says. "A very nasty place indeed. You did jolly well to get off the ground. Good thing I saw you and came back."

You feel proud instead of ashamed and discover a second wind. You fight and kick at the Pig Track and begin to enjoy yourself, and it. Once more you catch up your companions and lie down beside them while they eat your packed lunch. It has never for one moment stopped raining.

And then comes the voice of doom. "You must go back now," says the leader.

You sit up. "Nonsense!" you say. "Why, we've only just come out." "All the same, you must go back. Three or four miles of this kind of stuff is quite enough for you on a first day." "Three or four miles?" you say. "Why, we've done fourteen, I should think."

The leader points. There, practically under his finger, is your hotel. You accept your fate and get to your feet.

"What are you going to do?" you ask.

"Nothing very much. It's a bit late now for a walk. While you're getting back—and you can't miss your way, or we wouldn't leave you—we'll just bash round the Horseshoe"—he waves his hand at the whole ring of mountain-tops—"and join you at teatime." He rubs it in. "We'll probably be back first." You set off sadly. Instantly the whole mountain reverses itself. Going down has all the sensations of going up. You continue to fall over, to wrench legs, ankles, and now and again an arm. You become conscious of acute fatigue.

And suddenly you are once again standing under the little rock problem. You do not know it at the time, but your whole life is about to be altered. You have already learned that you will never make a real walker and you have seen and done enough to realise that climbing is not for you. And with all that in your mind, remembering the shriek you gave less than an hour before, you once more set your boot into the crack. This time you get one step higher than before, but this time you leap off backwards with complete confidence, only rolling about thirty feet down the mountain in consequence.

As you drag yourself down to the road you really are singing in the rain and telling yourself between stanzas that you are a silly middle-aged fool.

But that night in the hotel as you drink your second pint of beer, reflecting that there has to be something in the place which you can do without lessons, your eye is caught by a row of books. You pull one down at random and open it. "A step and a pull," you read, "brings you to a stance and thread belay. Now comes the crux of the climb. Go straight on up the wall to the overhang. The layback is severe and exposed for twelve feet, when relief is gained from a diagonal crack with ample scope for hand-jamming. At the end of this two small holds enable the stance to be won." You take this wonderful guide to a new world to your bedroom and persuade yourself to switch off the light only when you have been through it from cover to cover.

The next day you have lost your companions. Sadly you watch them set off from the hotel festooned with ropes and slings. From their pockets appear the toes of ordinary gym shoes, for these young men are "tigers" and are going to the great black face of Cloggy to "do" Bow Shaped Slab. You are not fit enough even to get as far as the lake under the cliff. As you watch them out of sight you recall another hotel book you were looking at during breakfast. There was something in it for you.

You put on your boots, and without the packed lunch slip quietly out of the hotel. Half an hour later you are clawing happily away at the many faces of the Eckenstein Boulder. After all, it was on this little piece of rock that the fairly modern art of face climbing was first demonstrated. One day, and before you are seventy at that, you mean to get up the ordinary route on Idwal Slabs or to the top of that famous beginner's climb Milestone Buttress.

And suppose you never do? Why, then for the rest of your life you are going to have all the delights of armchair climbing.



"St. Anne's on Sea"

Photo by S. Yarwood (Winnington)